Environmental Impact of Controlled Burns

Project Record
P2/081/1

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J C Pullen

Research Contractor:
Stanger Science & Environment

Publishing Organisation
Environment Agency
Rio House,
Waterside Drive,
Aztec West,
Almondsbury,
BRISTOL, BS32 4UD.

Tel: 01454 624400 Fax: 01454 624409
Website: www.environment-agency.gov.uk

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Statement of Use
This report details a study on the environmental impact of controlled burns. The report will be used to revise and/or supplement the Agency's pollution prevention guidance note PPG18 so that it provides guidance on the issues involved to Agency staff, the Fire Service and other interested parties.

Key Words
Controlled Burn; Fire; Firefighting; Fire Service; Foam; Hazard; Pollution; Risk; Risk Assessment.

Research Contractor
This document was produced under R&D Project P2-081 by:
Stanger Science & Environment, Great Guildford House, 30 Great Guildford Street, London, SE1 0ES

Tel: 0207 902 6159 Fax: 0207 902 6149

Environment Agency's Project Leader
The Environment Agency's Project Leader for R&D Project P2-081was:
Bruce McGlashan, Southern Region

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OVERVIEW

This Project Record presents background information and raw data gathered as part of the Environment Agency Research and Development (R&D) Project P2-081 *Environmental Impact of Controlled Burns.* It complements the Agency's Technical Report P388 of the same title issued in November 2000.

The scope of this R&D Project Record is summarised by the Contents list that follows. The purpose of this Project Record is to collate background information and raw data gathered during the project and so make it available to benefit users who require a greater level of detail than that given in the Technical Report.

EXECUTIVE SUMMARY

The Best Practical Environmental Option (BPEO) principle can be applied to pollution releases from fires at sites storing substances hazardous to the environment. In purely BPEO terms, the appropriate fire-fighting response is the one having the smallest overall environmental impact over all media (air, land and water). The concept of the controlled-burn tactic has developed and involves a restricted or controlled use of water or foam on fires to reduce potential environmental impacts of chemicals and contaminated firewater runoff. The Environment Agency wishes to develop policy on controlled burns and to establish workable guidelines on when controlled burn may be appropriate.

There are many parties with an interest in controlled burn, for instance: regulators, the Fire Service, operators, insurers and local authorities. These parties were contacted, so that any guidance and policy on controlled burn could be informed by their views. Most parties agreed with the basic philosophy behind controlled burn provided safeguards were in place to protect public and firefighter health and safety, and provided financial factors were also taken into account.

Six case studies were examined in detail. These highlighted the lack of financial information available on which to look in detail at costs versus environmental benefits. Costs were therefore assigned into broad categories. For each case-study incident, the environmental impacts were assessed, including impacts on human health, controlled waters, air pollution and the terrestrial environment. A rigid, quantitative approach was not possible because of the lack of measurements and quantitative data from the incidents. Therefore a semi-quantitative risk-ranking approach was used. The assessments of case studies involving controlled burns showed significant reductions environmental impacts compared to the probable impacts of conventional tactics.

Drawing on the approach used to assess the environmental impacts in the case studies, guidance has been prepared on the application of controlled burn as a fire-fighting tactic. Central to the guidance is the need for at-risk sites to carry out a risk assessment and, if necessary, put in place an emergency fire plan. A rapid screening

assessment has been developed to identify such at-risk sites. Guidance has been given on the key stages of a full risk assessment and this has been augmented with a worked example.

Potential legal conflicts of adopting controlled-burn guidance were examined. Of particular concern was the relationship between the Fire Services Act 1947 and the Water Resources Act 1991 and the Environmental Protection Act 1990. Current legal opinion on this is that there is no overriding duty under the 1947 Act to extinguish fires, nor is there is an overriding duty to protect property. Therefore, a decision whether or not to carry out fire-fighting operations would be governed by general principles of public law reasonableness (and by any applicable guidance). It is not hard to imagine circumstances where it would be reasonable for a fire officer to decide not to carry out fire-fighting operations because the consequences of carrying out the operations (whether these be environmental or some other consequences) would be worse than the destruction of property caused by failing to carry them out.

Under the 1990 and 1991 Acts, fire authorities may incur criminal or civil liability as a result of fire-fighting operations which cause the release of polluting materials into the environment. The issue here is not so much a conflict or inconsistency with the 1947 Act, but rather that legitimate fire-fighting operations are capable of creating criminal and regulatory liabilities under the 1990 and 1991 Acts. These liabilities would theoretically arise even where the consequences of failing to carry out the operations were severe, and the environmental consequences of carrying them out minor. In practice, it is not expected that the environmental enforcing authorities would exercise their discretion to pursue fire authorities in such a case. Indeed, to do so would probably be an unreasonable use of their discretion.

The Technical Report accompanying this Project Record concludes with a series of recommendations covering further work on substance thresholds, warning symbols, site screening, collection of financial data, the treatment of important buildings, and communications between parties.

CONTENTS

PART I PROGRESS REPORTS & PROGRESS MEETINGS

CONTROLLED BURN RESEARCH PROJECT

Summary of Progress as of 12 April 1999

1. Information Gathering Stage.

Checklist Responses - Progress against plan, barriers to progress
(See attached summary table of progress.)

Now have 2 responses from the 4 Agency regions. No responses from NW (Simon Crozier) or Southern (Dave Watson).
No responses either from SEPA (Bob Sergeant), DHNI (Norman Henderson)
Response from BASIS (Rob Simpson) received 1.4.99

Responses received from 3 (Devon, Royal Berks, Cleveland) of the 6 Brigades to date.
Northants, Avon and Dorset have not responded.
No response from CACFOA yet.

Discussions held with Loss Prevention Council and Association of British Insurers
Response received from Chemical Industries Association: these are from 2 unnamed members, one with an environmental viewpoint (EMS, etc) and the other with a fire outlook. Some more may arrive.
No response yet from UK PIA (Mr Maso).

Responses from EHOs via the CIEH: interviews with 2 Local Authorities with an interest completed.
No response yet from HSE but no response to date

Collation of checklist results, interpretation and reporting
Project Manager is piloting the interpretation/ reporting on the EHO/ Fire Brigade responses collate them.

Literature Reviews - Progress against plan, barriers to progress
So far 45 references identified and 20 reviewed and summarised.
Presently collating literature reviews, interpretation and reporting.

2. Case Studies

List of possible case studies
From our catalogue of incidents we are aware of so far, we have prepared a summary (attached) of the type of information available for each. These incidents are drawn from checklist responses and anecdotal information given in meetings with the Agency. Information varies from very comprehensive (e.g. Sun Chemicals) to very sketchy.

Project Manager has also written to The Institute of Environmental Assessment and Management and the International Institute for Environment and Development requesting details of any relevant published environmental impact assessments involving fires.

Screening of case study list
The list will be screened and case studies chosen based on the usefulness of information available and taking a representative number from each category (e.g. controlled-burn, put-out, mobile fires, static fires, etc.). To date, Sun Chemicals, D&L Plastics (Thetford), South Mimms incident, Bollams, Nothants scrapyard and Hemswell Airport seem likely to qualify.

Follow-up of case studies
It is hoped that by 12 April, most of the case study data will have been assembled, and the selected cases can be studied in detail. Work has already begun on case studies for Sun Chemicals and D&L Plastics (Thetford). In each case, data from the relevant Agency region, Fire Brigade and EHO is reviewed and incident logs from each of these will be reviewed.

Interpretation and presentation of case studies.
The case study process for Sun Chemicals has been piloted and the study key criteria and the pro forma report forms work well.

Future Project Work Timetable
We are aiming for completion of information gathering stage by end-April 99, with collation by end-May and interpretation/reporting of this stage by mid-July. Work will then begin on Guidance/Application phase of project.

J.C. Pullen
12 April 1999

1. Introduction & Background

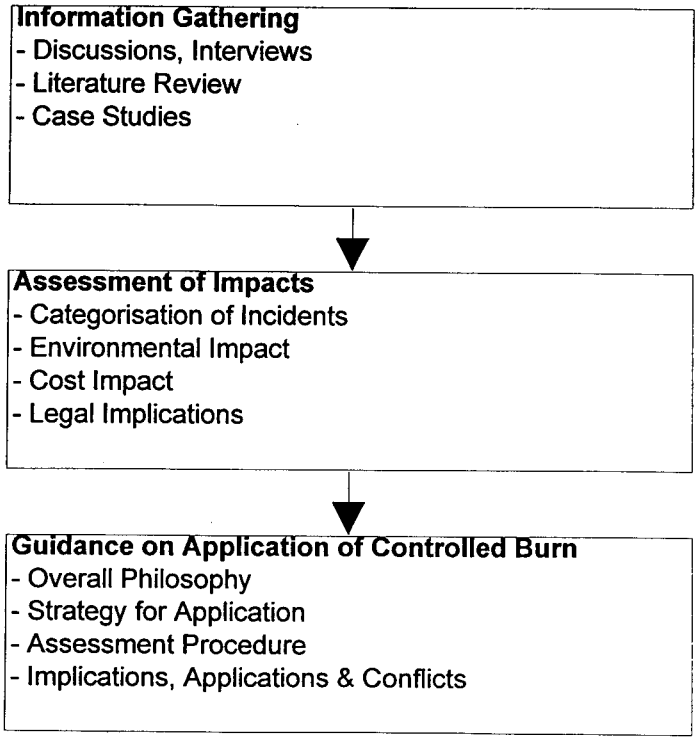
This national research project is concerned with the environmental impact of allowing fires to burn out (controlled burns) instead of being extinguished, at sites storing materials hazardous to the environment. A working definition of controlled burn for this project is "*a restricted or controlled use of water/foam on fires where chemical or contaminated run-off may be a risk to the environment*". In purely environmental terms, the appropriate decision-making process for pollutant releases (including accidental pollution incidents) is that of Best Practical Environmental Option (BPEO), whereby the option having the smallest *overall* environmental impact over all media (air, land, water) is chosen. (For the purposes of this study, the definition "environmental impact" also includes the protection of public water supplies.) The same decision making process could be applied to the scenario being considered as the subject of this study, i.e. whether the BPEO option is to put the fire out with water or foam (with perhaps a risk to surface or goundwater from contaminated firewater run-off); or to let the building burn (with the possibility of both short-term air pollution and longer-term pollution of land and water from deposition of airborne contaminants).

However, BPEO is concerned overwhelmingly with minimising environmental impact, whereas in practice the decision is complicated by other important factors, such as:

- whether immediate action is needed to prevent injury to people in or around the building;
- the legal and financial consequences of allowing fires to burn;
- the requirements of the site owner, insurance company and other organisations involved;
- the legal liability of the Fire Service when allowing a building to burn.

The Environment Agency is therefore keen to promote discussion internally and externally on the issue of controlled burns and to examine the views and attitudes of the parties that may be involved. The findings will be used to develop Agency policy on controlled burns and to develop guidelines on when controlled burn may be appropriate. The Agency has already agreed a memorandum of understanding with the Local Government Association which covers areas of mutual interest with the Fire Service. As well as being the best environmental option in some circumstances, controlled burn may also reduce risks to firefighters. The Agency is also about to publish the revised version of guidance note PPG18, *Pollution Prevention Measures for the Control of Spillages and Fire Fighting Run-off.* This provides general guidance on preventing water pollution and on the importance of developing fire-fighting strategies to prevent environmental damage. The structure of the phases of the study are summarised below:

Project Structure



12 April 1999
Your ref: Project P2-081

SUMMARY OF PROGRESS FOR INFORMATION GATHERING STAGE

Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environment Agency, Anglian region	Teresa Brown, Regional Pollution Prevention Officer	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✓	JP sent letter 28.9.98 requesting info/incidents. T Brown responded with details. Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98). Tried again on 22.1.99 without success. **Written submission received 16.2.99**
Environment Agency, NW region	Simon Crozier	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98). Tried again on 22.1.99 without success. Letter sent 11.3.99. Tried telephoning again on 1.4.99 without success.

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environment Agency, Southern region	Dave Watson	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success. Letter sent 11.3.99. Tried telephoning again on 1.4.99 without success.
Environment Agency, Thames region	Nigel Marshall, Regional EP Team Leader	Written response	Information on Thames Region via checklist submitted to Bruce McGlashan from J Pullen)	✓	JP sent letter 28.9.98 requesting info/incidents. **Received written submission 11.2.99**
Scottish Environmental Protection Agency (SEPA)	Bob Sergeant (on EA-National Fire Service Liaison Group)	Telephone discussion	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success. Letter sent 11.3.99. Tried telephoning again on 1.4.99 without success.

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Department of Heritage for Northern Ireland (DHNI)	Norman Henderson	Telephone discussion	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98. Tried again on 22.1.99 without success. Letter sent 11.3..99. Tried telephoning again on 1.4.99 without success.
BASIS	Rob Simpson 01335 343945	Telephone discussion	Eric Cooper/ Stuart Robson, water specialist	✓	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success. Letter sent 11.4.99. Written submission received 1.4.99.
Chief & Assistant Chief Fire Officers` Association (CACFOA)	Chris Green 01380 73110	Telephone discussion	Mick Pullin, fire specialist	✗	JP sent letter 28.9.98 requesting info/incidents. MP sent letter on ??.??.99 requesting checlist to be completed.
Chief & Assistant Chief Fire Officers` Association (CACFOA)	Martin Chapman, Dorset Fire & Rescue Service	Telephone discussion	Mick Pullin, fire specialist	✗	Incident details from CACFOA Finds computer forwarded to SSE on 2.12.98. Letter to M Kitchen from J Pullen, 14.10.98 requesting choose 8 x brigades. Follow up letter from M Pullin on 4 November. Further Letter from M Pullin 18 January. Reply 16 Jan 99. Letter sent ??.3.99. Chased-up by MP by telephone on 8.4.99.

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Operational fire service # 1 Devon	DO Hendy 01392 872211	Written response	Mick Pullin, fire specialist	✓	**Written response to abbreviated checklist received 17.2.99**
Operational fire service # 2 Royal Berkshire	DO Tidbury 01189 322231	Written response		✓	**Limited written response to abbreviated checklist received 17.2.99**
Operational fire service # 3 Cleveland	DO Dale 01429 872311 x4013	Written response		✓	**Written response to abbreviated checklist received 17.2.99**
Operational fire service # 4 Northants	DCO Henderson 01604 797032	Telephone discussion?		✗	Letter sent ??.3.99. Chased-up by MP by telephone on 8.4.99.
Operational fire service # 5 Avon	ACO Pearson 01179 262061	Telephone discussion?		✗	Letter sent ??.3.99. Chased-up by MP by telephone on 8.4.99.
Operational fire service # 6 Dorset	ACFO Dominy 01305 252075	Telephone discussion?		✗	Letter sent ??.3.99. Chased-up by MP by telephone on 8.4.99.

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
The Loss Prevention Council (LPC)	Dr Jeremy Hodge	Meeting or telephone discussion?	Jale Bradley	✓	Intro telephone conversation and checklist sent with cover letter. Meeting arranged for 21.1.99, but cancelled by J.H. New meeting held on 19.2.99 with Dr J Hodge and Mr T Humphreys (Association of British Insurers). Contacts getting approval for minutes of meeting.
The Chemical Industries Association (CIA)	Andrew Robinson/ Dr Mark Scanlon	Meeting or telephone discussion?	Jale Bradley	✓	Intro telephone conversation and checklist sent with cover letter. M.S. will distribute checklist and contact J.B with meeting date. 2 x responses from CIA member companies received, more may follow.
The UK Petroleum Industry Association (UK PIA)	Mr Maso	Meeting or telephone discussion?	Jale Bradley	✗	Intro telephone conversation and checklist sent with cover letter. J.P. will discuss checklist with key industries before contacting J.B. with meeting date. Chased up by telephone 12.4.99.
The Health & Safety Executive (HSE)	Dr Susan McCready-Shea	Telephone discussion	Jonathan Pullen, BPEO specialist	✗	Intro telephone discussion 24.11.98. Letter/checklist sent. Chased-up 16.12.98. Letter received 15.2.98; letter from EA sent in response 4.3.99
Environmental Health Officers (EHOs)	CIEH Howard Price	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 24.11.98. Fax sent. Found 2x LAs/ EHOs to contribute (see below)

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environmental Health Officers (EHOs)	Steve Quick Leicester City Council	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 24.11.98. Letter/checklist sent. **Telephone interview 21.12.98**
Environmental Health Officers (EHOs)	Andrew Barnes Milton Keynes Council	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 13.11.98. Letter/checklist sent. **Telephone interview 4.1.99**

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Table ??. Screening of incidents according to information available

Incident Reference	Information contained in incident report on:								
	Size of fire	Substances & quantities	Operational response	Impacts on water, air & land	Physical & emotional impacts on people	Financial/ insurance costs	Legal implications	Full report obtained	Further details available
Allied Colloids	✓	✓	✓	✓(w)	✓	✓	✓		✓
Flat-back lorry at South Mimms		✓	✓	✓(w)	✓	✓	✓	✓	✓
Harcross Timber treatment site	✓	✓		✓(w)		✓	✓	✓	file unavailable
Bolloms	✓	✓	✓	✓(w)		✓			✓
Garner Osborne electroplating, Newbury	✓	✓	✓(C/B)	✓(w)	✓	✓	✓	✓	received
Basingstoke			✓			✓	✓		✓
Telford military storage fire									
Pet-food fire incident, Croydon	✓	✓	✓	✓(w)		✓			✓
DML Plastics factory, Thetford	✓	✓	✓	✓(w)	✓	✓	✓	✓	received
Sun Chemicals, Slough	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plating works, Poole									
BDH, Poole									
Associated Octel, Ellesmere Port									✓
Wokingham fire									
Sainsbury`s, Chichester									
Basel, Switzerland									
Molloy Group, Ipswitch	✓	✓	✓	✓		✓	✓	✓	✓
Keymast Chemicals, Bletchley	✓	✓	✓	✓	✓	✓	✓	✓	received
Grimescote Metals	✓	✓	✓	✓(w)	✓	✓	✓	✓	✓
CROP Ltd., Wolverton		✓	✓	✓(w)					✓
Undergound storge facilty, Cleveland		✓							✓
Tanker carrying nitrobenzene, Cleveland		✓							✓
Tanker carrying toluene, Cleveland		✓	✓(C/B)						✓

Scrapyard, Northants.	✓	✓	✓(C/B)						✓
Warehouse, Reid Street, Poole	✓	✓	✓						✓
Hemswell Airport warehouse fire		✓	✓(C/B)	✓(w, l)	✓	✓			✓
Pender Plating, Poole									✓
Tyre Fire, SE England									✓

Internal memo

Stanger

To	Jon Pullen - Air Quality	Date	26 April 1999	From	Mick Pullin - Fire & Safety
cc		Ref	331/0618/98	Tel no.	0171-902-6108

Controlled Burns Project

Meeting of National Fire Service Liaison Working Group at Environmental Agency, Leeds, 15 April 1999

1. The Agenda for the meeting is attached. As can be seen our project was item No. 12. I had been advised to be there by about 11.00 am but this item was not discussed till after lunch. However from my point of view the other items being discussed were of interest because of their fire aspects.

2. My report was based on the attached documents.

   Firstly I reminded them of the Project Structure and then moved to the "summary of Progress" sheets. I had intended to go through each item in turn but at item 3 relating to EA/Southern I was forcibly told that he (I think Dave Watson) was not going to fill in the questionnaire after the '.....' letter he had received from Stanger Science and Environment. I did not note the exact word used! Suffice to say he did not like the tone of the letter. He then said it had been discussed at their January meeting.

   There was general agreement that the questionnaire was too long and many parts not relevant. I explained that it had been seen at a previous meeting and had been discussed and approved. I reviewed the remainder of the EA submissions (or lack of them). Most of those present from EA said they would see what could be done.

3. I then decided to be more gentle with the fire service non-returns. The CACFOA representative said he would speak to Ken Rose and sort theirs out. Replies have now been received from 5 Brigades (26/4/99) with the sixth promising to send as soon as possible.

4. The remaining responses were reported as per document.

5. The literature reviews to date were noted, ie 45 identified, 20 reviewed and summarised.

6. The progress with case studies was presented. This included the names of the 23 incidents being screened to date.

7. A brief summary of the expanded study of the D&L Plastics fire in Thetford was given and it was noted that Mike S. has been reviewing the Sun Chemicals fire in some detail.

8. I then advised that our programme for the coming months was:

   - completion of the information gathering stage by the end of April 1999;
   - collation by the end of May 1999;
   - interpreting and reporting this stage by mid-July;
   - work will then commence on the guidance/application phase of the project.

   I did point out that all the responses were required as soon as possible and if these were not forthcoming we will have to proceed with the limited information available.

9. The question of costs to the EA for clean up work were discussed. The FB representative said he would obtain fire service costs for, say, a typical appliance. This will be based on existing data already collected by one Brigade. The whole question of costs will be further considered by EA.

10. The meeting accepted the progress made so far and offered no other comments than those given above.

Mick Pullin

CONTROLLED BURN RESEARCH PROJECT

Minutes of Progress Meeting with Environment Agency 1030 h, 28 March 2000 at Guildborne House, Worthing.

Attendees:

Stanger Science & Environment
Jon Pullen (JCP) - Project Manager

Environment Agency
Bruce McGlashan – Project Manager
Pam Mardon – Project Administration Manager

Copies to:

Schwar Consulting
Mike Schwar (MJS) - Specialist Manager

DBA
Jale Bradley (JB) - Risk & Insurance Manager

1. Overview of Progress

JCP outlined progress to date: the literature review and views of interested parties had been issued to BMcG in draft form; the case-studies section is complete but needs proof reading and is expected for draft issue in 7-10 days time. Work will then commence on the final section, Guidance.

2. Comments of Drafts

BMcG has sent copies of drafts to steering group. Generally happy with content, but there are a number of specific comments/suggestions that have been made.
Action: BMcG to send JCP details of specific comments.
Some comments on format/style were:
Consider abbreviating legislation review, incorporating subheadings (see CIRIA report for example). Same comment for Environmental Assessment section, but also consider putting some of the in-depth material in an appendix. Also highlight source-pathway-receptor (see CIRIA report). For Section 3, perhaps use a less prosy style, with more sub-headings for each respondent's view and a sub-section at the end of each section saying where there was and was not agreement. BMcG has some further information on frequency of incidents.
Action: BMcG to send JCP details of updated incident frequencies.
PM outlined requirements for format of Agency R&D reports and gave JCP the revised (August 1999) guidance on this. Template for report is also available.
Action: PM to send e-version template to JCP.
PM said an abbreviations page would be useful.

3. Future Work and Programme

JCP said that some indication of Agency response/initial policy direction following information-gathering stage is necessary to produce guidance. BMcG instructed JCP to produce the guidance

from a technical good practice standpoints: the Agency will itself subsequently distil its policy from this and dovetail SSE`s guidance with legislation/means of implementation when it produces its updated PPG18 or PPG21 or a new PPG. SSE should steer clear of speculating about implementation through specific acts/regulations.
JCP advised report will be ready to issue in its final draft form in about 6-8 weeks.

4. Administration and Finance
PM will provide report covers, technical report number and ISBN number.
PM asked about Project Record. JCP said that presently everything is being filed to comply with SSE`s ISO9001 Project Management System. JCP suggested that at the final meeting we agree what is important (e.g. Checklist returns) and what is not essential for inclusion in Project Record.
PM raised issue if press release when project completed. JCP said we have a marketing manager who can arrange this or we will contribute if required for a press release through Agency's own press officer.
Action: PM to advise JCP on press release details nearer the date.
PM had received final invoice, less the 10% held until end of project.

5. Date of Next Meeting
Date of project wind-up meeting TBA

J.C. Pullen
29 March 2000

CONTROLLED BURN RESEARCH PROJECT

Minutes of Progress Meeting with Environment Agency 1030 h, 26 October 2000 at Guildborne House, Worthing.

Attendees:
Stanger Science & Environment
Jon Pullen (JCP) - Project Manager

Environment Agency
Bruce McGlashan – Project Manager
Pam Mardon – Project Administration Manager

Copies to:
Schwar Consulting
Mike Schwar (MJS) - Specialist Manager

DBA
Jale Bradley (JB) - Risk & Insurance Manager

1. Overview of Progress
JCP had resubmitted a revised draft report, taking into account previous comments.

2. Comments of Drafts
Further comments on the revised draft had been received from BMcG, PM, Teresa Brown and John Batty.
Action: JCP to take comments into account and revise report, by end of last week November.

3. Project Record
To contain supporting information to main report, such as raw data, letters (be selective), questionnaires/responses, statistics.
Short introduction stating purpose, layout, etc.
Project Record needs titles and sections, but page numbering not feasible.
One bound (4-ring file) and one unbound copy to be submitted.
Action: JCP to produce Project Record by end of last week November.

4. Administration and Finance
There is 10% of total price on hold until end of project. JCP will raise an invoice for this shortly after final report and Project Record submitted.

4. AOB
Publicity/ press release when project completed: JCP offered co-ordination with SSE`s marketing department.

J.C. Pullen
30 October 2000

NATIONAL FIRE SERVICE LIAISON WORKING GROUP

ENVIRONMENT AGENCY, PHOENIX HOUSE, LEEDS
THURSDAY 15TH APRIL 1999
10.00 AM

AGENDA

1.	APOLOGIES	
2.	MINUTES OF LAST MEETING	
3.	MATTERS ARISING	
4.	BUSINESS PLAN	JB&BM
5.	MOU / CONTROL MECHANISM FOR MOU	JB&BM
6.	COST RECOVERY SCHEDULE	BM
7.	USE OF FIRE SERVICE AS LONG TERM CONTRACTORS	BM&JB
8.	EQUIPMENT	
	Equipment Database	SAC
	Future Funding for Equipment	HS
	Procurement Update	SO
9.	MOVEMENT OF SPECIAL WASTE	DW&BM
10.	AMBULANCE SERVICE DECONTAMINATION ISSUES	BF
11.	GROUNDWATER VUNERABILITY MAPS	JB
12.	CONTROLLED BURN R&D PROJECT	M Pullen
13.	AOB	
	SEPA Update	SO
14.	DATE AND VENUE OF NEXT MEETING	

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Note to file

Subject: Controlled Burn Guidance – kick off meeting
Date: 11 August 1998, 11am to 1pm, followed by half hour meeting between JP and MS

Present: Bruce McGlashan – EA Senior Pollution Officer, based mainly at Wallingford with a desk at HQ in Bristol
Tel: 01491 828472
Fax: 01491 828367
Can be contacted at Bristol on e-mail – will provide details later
Steve Moorcroft – SSE
Jon Pullen – SSE
Mike Schwar - Schwar Consulting

Competition:
Won project on technical merit and price. Other main contender was Entech. We were considered to have the stronger team with our experience with the Fire Brigade and because we had covered all aspects of the project with a good supporting team covering the insurance, petrochemical/industrial side and legal input.

Press release:
BMcG was happy that SSE issues a press release, and was happy for MS to be part of the team under his company's name Schwar Consulting.

Contacts:
BMcG agreed to provide a list of contacts within the EA, as well as in external organisations we may find useful. He asked if we were planning to speak to the HSE – this had not specifically been included in the specification. We said we might, if this can be done within the agreed resources and budget.

Documents:
BMcG agreed to provide a copy of the CIRIA report on fires and spillages. He would also provide details on fire fighting foams.

Methodology:
BMcG conceived the project, and was looking to us provided a document identifying all the main issues associated with controlled burns. He did not want us to write a policy document – just to provide the technical back up on which such a document could be based.

He wanted us to collate details of the approaches adopted by the various interested parties. This was to include the use of EMSs and the section relating to emergency procedures.

Meetings:
BMcG said we should attend a meeting with key people in the EA at Reading on 18 September. Those present will include: John Batty, Chris Green of Wiltshire FB, Dale Lynon? Chairman of PAWG and others from the Fire Group.

We should also join members of the National Fire Service Liaison Group who are meeting at 10am 7 October 1998 in the National Motor Cycle Museum in Solihull. He suggested we arrive about mid-day after they have finished their meeting. Martin Chapman is a key person we would meet there.

Time scales:

BMcG said that his interest was in completing the task within the specified 16 month time scale. He was not overly concerned with the detailed timing.

Action:

It was agreed that the study team should now review the questions to be asked of the various interested parties. This should be written up and presented at the above mentioned September meeting.

Also, it was agreed that the R&D Technical Report B would comprise, amongst other things, the original discussion notes of the discussions, telephone conversations. BMcG said he would clarify precisely what needs to be included in this Report and in the Project Record mentioned in the Schedule II Specification.

Subsequent meeting between JP and MS:

MS to review the reassignment of time/costs made by JP, and to let JP have his comments by Thursday to discuss over the telephone on Friday (as JP is then going on leave).

JP and MS to consider detailed questions the various specialist need to pursue with interested parties. MS to pass his ideas asap to JP.

JP to draft letter to all study team members, setting out work areas and (for internal staff) and budgets. Letters also to be drafted by JP to external consultants. In the case of Jale Bradley the letter will be similar to that sent to internal staff. In the case of David Ball and Elizabeth Hall a simple letter of appointment will be sent saying that they will be approached as and when their specialist skills are needed. All letters to come from either SM or SM.

End:12.8.98
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CONTROLLED BURN RESEARCH PROJECT

18 Sept.

Minutes of Meeting, 10.00h, Environment Agency, Reading

Environment Agency National Fire Group
Bruce McGlashan (BM) - Environment Agency National Emergency Management Group
Teresa Brown (TB) - Environment Agency Anglian Region, Regional Pollution Prevention Officer on EA National Fire Liaison Group
Dale Eynon (DE) - National Emergencies Co-ordinator, Chair of Pollution Alleviation Working Group (PAWG)
Stewart Ower (SO) - Environment Agency Thames Region, Incident & Emergencies
Chris Green (CG) - Wiltshire Fire Brigade, CACFOA representative on Group

Stanger Science & Environment
Jon Pullen (JCP) - Project Manager
Mick Pullin (MP) - Fire Specialist Manager
Mike Schwar (MJS) - Specialist Manager (Schwar Consulting Ltd)

1. Progress Summary
JCP and MJS summarised progress since kick-off meeting, consisting of: draft checklist for structured interviews; organigram showing current balance of issues on controlled burn; and possible decision making chart for controlled burn.

2. Insurance aspect.
The Loss Prevention Council (LPC) has been quite insular and not particularly co-operative. Do they understand what they are insuring with regards to this issue? or do they just charge premium +10% to cover such eventualities? Consequential loss? Are current insurances appropriate? (NB. there *are* some specialists such as Factory & Mutual Ltd and the may require a risk assessment before they insure). Do environmental liability policies cover the issue? Does the owner understand what he needs to insure?
Action - JCP to pass on these points to Jale Bradley, Insurance & Risk Specialist Manager.

3. Draft Memorandum of Understanding between Environment Agency and Fire Service
How close is it to issue? Now at final draft stage, signing imminent.
What have been the arrangements between EA-FS up until now (i.e. the period covered by our study)? Things have improved enormously over past years from the previous conflictural situation. Many of the things in the MoU have already been implemented. Understanding and awareness need to improve.

4. Draft Revised PPG18
How close is it to issue? Now at draft stage, some tidying up to do but largely complete.
What has been the guidance up until now (i.e. the period covered by our study)? The old PPG18 did not tackle the issue of controlled burn.

5. Guidance on Policy Item in Project Specification
JCP: at kick-off meeting it was inferred that this would not be required, but it was noted that it was a specific requirement of the specification. BM confirmed that this would not be required and that Environment Agency would extract relevant policy from our general technical report.

Action: JCP to write and advise Nicky Bailey (NB), R&D Management Support Officer.

6. Budget and Changes to Scope

JCP advised that the project was very tightly budgeted but changes within individual parts of the project could be accommodated without variation charges provided those parts remain within the budgeted hours. In particular, the original Proposal/ Specification did not require interviews/ discussions with HSE or Local Authorities (as suggested at Kick-off Meeting); or attendance at National Fire Group Meetings.

BM requested that LAs/EHOs/NSCA and HSE be added to list of consultees, but keep within original interview/discussion budget. To help this, BM will provide SSE with a list of people/organisations who can be consulted at EA-National Fire Service Liaison Group on October 7, which will liberate time for extra consultees. Additionally, EA no longer requires visits in person to Agency regions. BM also advised that meetings such as EA-NFG can be considered in with the Progress Meetings budgeted hours.

Action: JCP to write to NB and advise of changes.

Action: JCP to forward draft checklist to BM.

Action: BM to advise JCP with list of people/organisations who can be consulted at Oct 7 meeting as part of information-gathering stage of project.

Action: BM to advise on whether attendees at Oct 7 meeting will be able to provide us with answers then, or at later date. This will enable JCP to decide which SSE specialist managers should attend.

7. Miscellaneous

CG advised virtually every fire in Wiltshire is tackled by defensive fire-fighting, principle may be published in Fire brigade manuals soon. Example: Telford military storage fire. mentioned existing HSE risk-assessment process for storage of hazardous materials.

TB raised issue of burn *cf* incineration, especially with regard to formation of and incomplete destruction of dioxins at various temperatures. Fighting a fire may change process from incineration to burning. Needs to be considered as part of risk assessment/ emergency plan.

SO advised that metal finishing/electroplating industry was considered high-risk sites by both Environment Agency and Fire Service (particularly as HCN generated!). Pilot study being carried out by Environment Agency on one site in conjunction with Fire Service and Metal Finishing Association. (NB. the latter have a CoP). Study will be 1) identify site 2) Pollution prevention visit 3) draw-up contingency plan.

BM advised that currently the Environment Agency is reactive to incidents to ***water*** to decide which industries to look at, rather than screen by risk assessment. Means has only looked at immediate environmental impact rather than chronic or delayed impact due to air pollution/ deposition. No current link-up with OPRAH scheme. (Chris Bunt (?) is Agency expert on OPRAH). Agency yet to agree on standardised risk-assessment tool.

Works-notices powers are imminent: will enable Agency staff to go into non-regulated sites if they think an imminent risk of water pollution, and serve notices. Would be site specific, couldn't serve notice on all operators in an industry sector requiring them to develop a controlled burn emergency plan.

SO advised on pet-food fire incident in Croydon, and electroplating site fire incident in Newbury.

DE advised flag-up non-hazardous materials sites as a potential issue, but can restrict involvement to noting that many of the principles may be applicable to non-hazardous sites.

BM advised that about 10-15 out of approx 200 water pollution incidents (year?) were due to fires.
CG advised details of an incident logged on FDR1 fire service report.
DE pointed out that the EA incident list has records of all Cat 1 incidents (impact on water) and from 1999 will categorise all media.

BM thought that CIMAH/COMAH sites well covered because they are well managed. Anecdotal evidence that it is not necessarily the big sites that are the problem, but badly-managed small sites that have a much greater likelihood of fire. Example: plastics fire incident at Thetford.

TB: Lots of sites covered by B1 industrial use. Could this classification be used to screen for high risk sites?
Self implementation v regulation. Maybe pressure from insurers could be used to do this?

Minuted by J C Pullen, 18.9.98

CONTROLLED BURN RESEARCH PROJECT

Minutes of Meeting, 13.00h, 7 October, Environment Agency, Solihull

National Fire Service Liaison Group & EA Steering Group
John Batty (Chair, Environment Agency Anglian Region
Bruce McGlashan (BM) - Environment Agency National Emergency Management Group
Teresa Brown (TB) - Environment Agency Anglian Region, Regional Pollution Prevention Officer on EA National Fire Liaison Group
Simon Crozier (SC) - Environment Agency NW Region
Nigel Marshall (NM) - Environment Agency Thames Region
Stewart Ower (SO) - Environment Agency Thames Region
Dave Watson (DW) - Environment Agency Southern Region
Norman Henderson (NH) - DHNI
Martin Chapman (MC) - CACFOA
Kevin Arbuthnot (KA) - LGA

Stanger Science & Environment
Jon Pullen (JCP) - Project Manager
Mick Pullin (MP) - Fire Specialist Manager
Mike Schwar (MJS) - Specialist Manager (Schwar Consulting Ltd)

1. Progress Summary
JCP and MJS summarised progress since kick-off meeting and explained the information needed from our interviewees.

2. General Comments/ Feedback
Water availability sometimes a limiting factor in fighting fires - reactive controlled burn, whereas pro-active controlled burn has an element of pre-planning.
Containment for fire water can allow it to be re-used and thrown back on the fire.
Works notices - will cover 9000 sites.
Decision on controlled burn or to put out often depends on how quickly the resources are needed back, i.e. a cost is involved for the fire service.
Many barn-fire incidents. Possible conflict with e.g. the farmer who wants fireman to stay there to save his barn.
Fire Service has existing guidance for Controlled Burn on agrochemicals.
Garden centres/ DIY superstores with herbicides, etc. now of concern.
For views/ attitudes, only consider last 5 years.

3. Comments on Information-Gathering Procedure
The views of EHOs are important. Approach through some grouping such as CIEH or NSCA. The Local Government Association (LGA) not thought to be a good route.
Action - JCP to establish a route to EHOs
Water companies - do we want them to be consultees? BM advised that this was not necessary. Fire Service representatives expressed concern that discussions with only x3 Brigades would not give a representative view. On the other hand, Agency views are expected to be much more uniform across the country. JB suggested changing scope of the study to allow discussions with x8 Brigades and only x3 Agency regions. Change agreed with BM. Fire Service representatives

at meeting asked for their views on which brigades SSE should speak to. Advised write to CACFOA Operations Technical Committee, c/o Martin Kitchen, County Fire Officer, Fire & Rescue Service, Headquarters, St Davids, 70 Wray Park Road, Reigate, Surrey RH2 OEJ.
Action - JCP to request list of suitable brigades, contact names and numbers from CACFOA.
Action - JCP to agree with BM the 3 x Agency regions to be canvassed.
Action - JCP to advise Nicky Bailey on change to technical scope of contract.

3. Incidents referred to during meeting
Plating works, Poole, next to river.
Basingstoke incident.
Associated Octel, Elsmere Port. Cheshire fire service criticised - a public perception issue.
BDH fire, Poole. 18 x fire services and x3 Agency regions involved.
Slough - Sun Chemicals.
Wokingham fire - tributyl tin and Lindane. Some time ago.
Basel - international incident.

J.C. Pullen
12 October 1998

Ref 331/0618/98

Stanger

Stanger Science & Environment
The Lansdowne Building
Lansdowne Road Croydon CR0 2BX
Telephone (0181) 256 4800
Fax (0181) 256 4862

Mr B McGlashan
Senior Pollution Officer
Environment Agency
Kings Meadow House
Reading
RG1 8DQ

Air Pollution Department
Direct line 0181 256 4806

16 January 1999

Your ref: Project P2-081

Dear Bruce

CONTROLLED BURN PROJECT - PROGRESS ON INFORMATION GATHERING STAGE

Please find attached a table summarising progress on the information gathering stage of the controlled burn project. As you will see, we have put considerable effort into this stage so far, but the responses have been variable.

- For the Environment Agency regional contacts, we have had difficulty getting to talk to the contacts to run through the checklist: I recognise this is likely to be due to the nature of their work, with emergency callouts making it difficult to plan such interviews ahead. Maybe you have some suggestions on this?
- We are still waiting for Martin Kitchen of CACFOA to get back to us with the names of the 8 fire brigades to be contacted.
- EHOs with relevant expertise/experience were located via the CIEH. Two EHOs have been contacted and the checklists were completed successfully. Our first case study has been completed.
- Contacts have been made with LPC, CIA and UK PIA and dates for meetings are soon to be confirmed.
- The relevant expert in the HSE has been contacted on several occasions, but we have been unable to get a response so far.

Consistency of effort in chasing-up interviewees for information is important. It was expected that the extent of co-operation from those approached would be good, but we would need to avoid the possibility of spending 80% of the effort chasing 20% of interviewees. A guideline was needed, both to ensure the time remains on budget and also to avoid different amounts of persistence from different

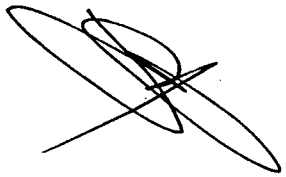
members of the team unduly weighting the returns. At the project design stage we had planned that after personal contact had been made with the right person in the organisation and a request made for a meeting/ interview/ information, they would be chased-up one further time for information if they did not respond. As you can see from the summary table, the amount of chasing needed has been considerably more than this. However, we will still need to be mindful about this issue.

You may recall that you were going to obtain the details from Thames Region using one of our checklists. In case you do not have a spare copy I have enclosed one for you.

One final thing: I received a letter from D Green on 26 November, regarding the contents of the Checklist and its suitability for the fire services. He was going to write to you, forwarding some suggestions on how the checklist could be modified to include only those areas directly relevant to the Brigades. Did you receive these comments?

Please give me a call if you have any queries.

Yours sincerely



Jon Pullen
Project Manager

Encl.

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Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environment Agency, Anglian region	Teresa Brown, Regional Pollution Prevention Officer	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✗	JP sent letter 28.9.98 requesting info/incidents. T Brown responded with details. Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98). Tried again on 22.1.99 without success.
Environment Agency, NW region	Simon Crozier	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98). Tried again on 22.1.99 without success.

Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environment Agency, Southern region	Dave Watson	Meeting or telephone discussion?	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success.
Environment Agency, Thames region	Nigel Marshall, Regional EP Team Leader	Written response	Information on Thames Region via checklist submitted to Bruce McGlashan from J Pullen)	✗	JP sent letter 28.9.98 requesting info/incidents.
Scottish Environmental Protection Agency (SEPA)	Bob Sergeant (on EA-National Fire Service Liaison Group)	Telephone discussion	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success.

Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Department of Heritage for Northern Ireland (DHNI)	Norman Henderson	Telephone discussion	Eric Cooper/ Stuart Robson, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98. Tried again on 22.1.99 without success.
BASIS	John Seddon 01335 343945	Telephone discussion	Mick Pullin, fire specialist & Eric Cooper, water specialist	✗	Letter and checklist sent by S Robson on 18.11.98. Chased up on a number of occasions to run through checklist or confirm a time/date for doing so. Not successful so far. (See Memo from S Robson to J Pullen, 16.12.98.) Tried again on 22.1.99 without success.
Chief & Assistant Chief Fire Officers` Association (CACFOA)	Chris Green 01380 73110	Telephone discussion	Mick Pullin, fire specialist	✗	JP sent letter 28.9.98 requesting info/incidents
Chief & Assistant Chief Fire Officers` Association (CACFOA)	Martin Chapman, Dorset Fire & Rescue Service	Telephone discussion	Mick Pullin, fire specialist	✗	Incident details from CACFOA Finds computer forwarded to SSE on 2.12.98.

Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Operational fire service # 1 to #8	?? (To be advised by Martin Kitchen, CACFOA)	Telephone discussion	Mick Pullin, fire specialist	✗	Letter to M Kitchen from J Pullen, 14.10.98 requesting choose 8 x brigades. Follow up letter from M Pullin on 4 November. Further Letter from M Pullin 18 January. Still awaiting reply.
The Loss Prevention Council (LPC)	Dr Jeremy Hodge	Meeting or telephone discussion?	Jale Bradley	✗	Intro telephone conversation and checklist sent with cover letter. Meeting arranged for 21.1.99, but cancelled by J.H. New meeting date to be advised.
The Chemical Industries Association (CIA)	Andrew Robinson/ Dr Mark Scanlon	Meeting or telephone discussion?	Jale Bradley	✗	Intro telephone conversation and checklist sent with cover letter. M.S. will distribute checklist and contact J.B with meeting date.
The UK Petroleum Industry Association (UK PIA)	Andrew Sangster/ Mr John Phipps	Meeting or telephone discussion?	Jale Bradley	✗	Intro telephone conversation and checklist sent with cover letter. J.P. will discuss checklist with key industries before contacting J.B. with meeting date.
The Health & Safety Executive (HSE)	Dr Susan McCready-Shea	Telephone discussion	Jonathan Pullen, BPEO specialist	✗	Intro telephone discussion 24.11.98. Letter/checklist sent. Chased up again 16.12.98, and 26.1.99.

Organisation	Contact Person	Expected Nature of Discussion	SSE Interviewer	Complete?	Note on Progress or Barriers to Progress
Environmental Health Officers (EHOs)	CIEH Howard Price	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 24.11.98. Fax sent. Found 2x LAs/ EHOs to contribute (see below)
Environmental Health Officers (EHOs)	Steve Quick Leicester City Council	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 24.11.98. Letter/checklist sent. Telephone interview 21.12.98
Environmental Health Officers (EHOs)	Andrew Barnes Milton Keynes Council	Telephone discussion	Jonathan Pullen, BPEO specialist	✓	Intro telephone discussion 13.11.98. Letter/checklist sent. Telephone interview 4.1.99

PART II COMPLETED INFORMATION GATHERING CHECKLISTS

2.1 Environment Agency, Anglian Region

2.2 Environment Agency, North West Region

2.3 Environment Agency, Midlands Region

2.4 Environment Agency, Thames Region

2.5 British Agrochemical Standards Inspection Scheme (BASIS)

2.6 Chief and Assistant Chief Fire Officers` Association (CACFOA)

2.7 Avon Fire Brigade

2.8 Royal Berkshire Fire and Rescue Service

2.9 Cleveland Fire Brigade

2.10 Devon Fire and Rescue Service

2.11 Dorset Fire and Rescue Service

2.12 Northamptonshire Fire and Rescue Service

2.13 Minutes of Meeting with Health & Safety Executive (HSE)

2.14 Leicester City Council Environmental Health

2.15 Milton Keynes Council Environmental Health

2.16 Loss Prevention Council

2.17 Chemical Industries Association (CIA)

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Environment Agency, Anglian region	**Date: 16 Feb 1999**
Individual interviewed: Teresa Brown	**Interviewed by: J Pullen**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Attending incidents - generally with emergency service where incident management such as controlled burn would be an issue - involved with site owners/emergency services in emergency/contingency planning discussions which could include requesting the provision of fire water containment systems of controlled burn.
2	All	*To what extent are you personally involved in fire incidents?* No recent experience - non-operational in terms of incident response since January 1992.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* Definition probably varies depending on the person - their experiences and background (waste/water). I would expect along the lines of "allowing a fire to burn out using minimal amounts of water to protect adjacent structures/facilities - generally to apply in fires involving hazardous materials where the consequences of contaminated run off posed unacceptable risk to water environment.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* N/A.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* N/A.
6	FS	*How often are procedures reviewed?* N/A.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* I am sure Incident Commander Fire Officer would take ultimate decision, but we know that controlling fire water run off has occurred as part of incident management so awareness of environmental problems exist.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* Not sure if system has been tested on a proper incident involving tripartite discussions between EA/Fire/LA.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making? Who makes the decision as to whether a controlled water is at risk?* It does not for me and assume it would for others, but must depend on experience of officers dealing (both Fire and EA).
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Too much incident management made "on the hoof" more pre-planning desirable but requires resources and tools to enable good judgements to be made.

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Risk of life is paramount and over rides environmental implications. Re water environment, obviously the sensitivity of receiving water and pathways determines the seriousness of any particular incident - therefore knowledge of local path by both fire and water is crucial (i.e. pre-planning at high-risk sites).
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* No - Fire brigade constraints not a problem in my experience.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* Seems reasonable, but system may have been put in for other reasons, e.g. water shortage and ability to recirculate water. Fire Service should have info - and will increasingly have it.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Can always do with more - especially difficult to put into practice information contained in books and reports. Although these things are often site specific.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A.
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* Control room / 24 hours standby system.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Needs to be established at a local level between Brigade and local EA when high risk sites are discussed. Yes improvements could be made.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* Depends on site - could be LA, Police, HSE, Health Agencies i.e. possible "cloud".
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Where relevant - so need to know which sites are an important consideration.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Environmental protection, mainly water but also air - also public safety.
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Potential for significant impact is high, but enforcement action is not generally an outcome rather monitoring and learning lessons. Unless there is an incident that provokes discussion and thought, then not too significant i.e. we are not very proactive about this.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Significant in serious incidents.
25	All	*Does your organisation presently have a policy on controlled burn?* Not sure I am aware.
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A.
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A.
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* Not clear.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A.
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes but I am fortunate to be on National Fire Group and controlled burn discussions!
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* The organisation as a whole - probably no, maybe a limited understanding at higher levels. I presume that R&D is being done to discuss this.
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* N/A.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Good contact with some brigades personally, but other colleagues deal directly with others.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* 12 years operational experience - every incident is different - nature of the site, hazard, risk and environmental sensitivity a well as geographic/demographic factors. We should pool more information between EA regions and brigades.

35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* Anglian region has a lot of ground water, therefore we are generally aware of this.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* More on water than air/land.
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* No - EA concerned only with environment.
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)*
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Pollution Incident System - no field specifically for controlled burn - this would be in memo field (there is a code for pollution type - firewater).
41	FS	*What is the number of all fires in the UK/ your Region?*
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving ≥4 pumps with ≥2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Difficult to say - depends on brigades - this notification is different for different brigades.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Not sure.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* Pollease database - many records 250+ most not significant.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* More by luck than pre-planning I expect - thinking on feet at time of incident - rare, but then so are the serious incidents that involve any potential for this to be an option.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* Not sure.
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Supplied some to Stangers already.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* Yes in advisory role, both internal and external, not operationally.
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* As early as possible, discussions with fire and LA.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Before if possible - but not always possible because may not know all risk sites. Discussion with Fire eventual and LA (not much dialogue with LA exists), also HSE.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* Not sure.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* I am trying to raise awareness; whether this is done is at local officers discretion. Often takes a back seat to operational constraints and workload. Apart from Basis Stores.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* For Basis Stores and some other major sites e.g. CIMAH sites.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* As 54.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* Do not know.
57	All	*In your opinion, who should be involved in making the emergency plan?* Local officer from EA with regional support if necessary
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* Fire and LA, HSE may be at some sites and EA.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* Emergency services/company/EA/LA etc.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* Emergency services/company/EA/LA etc.

61		Additional notes:

		Sites to be covered by controlled burn guidance
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* As PPG18.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* High risk sites as defined by Fire/EA/HSE - priorities by site sensitivity.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* Plastics manufacture / recycling.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* Not sure.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Yes.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* Yes to all - but take site sensitivity into account. Last one yes - to require emergency plans.
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Hazardous substances manufacture and storage e.g. agrochem stores, smaller sites may be important in sensitive areas.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* Some have - it is discussed at meetings, providing information more difficult.

70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* BASIS.
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* If practical - but would be difficult.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* Yes.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes.
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* With difficulty.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* As stated.
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* Not sure.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* Groundwater regulations may have implications.
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* Not sure.
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* Not sure we know.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* Not sure we have any apart from PPG 18.
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A.
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* Not sure there are any.
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Costs for environmental damage, monitoring and mitigation higher if contaminated fire water gets out.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A.
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A.
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.

91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not sure.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* See 87.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not sure.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Not sure.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* My opinion - local liaison if practical.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* My opinion - none.

101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Generally be press briefings by O/C and investigating officer. Media can be a big problem in influencing public perception of an incident.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* No response
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not sure.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* N/A
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Environment Agency, NW Region	**Date: Received 26 July 1997**
Individual interviewed: Simon Crozier	**Interviewed by: J Pullen**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Advisory, in terms of assessing environmental impact
2	All	*To what extent are you personally involved in fire incidents?* Occasionally.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* Allowing a fire to burn to restrict firewater run off/environmental pollution.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* Question not applicable to Environment Agency.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* Question not applicable to Environment Agency.
6	FS	*How often are procedures reviewed?* Question not applicable to Environment Agency.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* Question not applicable to Environment Agency.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Leading Fire Officer based on advice from those parties involved.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* Yes.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* Yes. EPO from Agency will determine risk from their knowledge/experience.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Need to ensure all parties are consulted.

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Appropriate - if drainage from the site leads to an environmentally sensitive area. Inappropriate - if there is a risk of the fire spreading more extensively.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Not something I would get involved with.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* There is still the issue of disposal of firewater. Need to consider the issue.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Training needed.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* Question not applicable to Environment Agency.
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* In accordance with threshold limits in the MoU.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Perhaps consider always contacting Agency when a controlled burn is to be implemented or considered.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* Agency/Land Owner needs to be informed.
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Needs to be addressed as an option yes.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* What will the long-term environmental impact be?

23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Limited in the North West of England.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Not as important.
25	All	*Does your organisation presently have a policy on controlled burn?* Not to my knowledge (guidance only in PPGN).
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* Question not applicable to Environment Agency.
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* Question not applicable to Environment Agency.
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* Do not know.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* Question not applicable to Environment Agency.
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Question not applicable to Environment Agency.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Incident dependent.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* Limited consultation of all parties.
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* Yes
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* More training of agency staff is required to demonstrate to staff what their options are.

37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* Not able to comment.
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* Pesticide fires - extremely beneficial to implement a controlled burn.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Incident.
41	FS	*What is the number of all fires in the UK/ your Region?* Report forms could detail this information.
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving ≥4 pumps with ≥2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* The decision should be determined by environmental risk, not size of fire.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Not known.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Rare event.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* No response
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Fire at pesticide installation in Burtonwood, Warrington. Controlled burn, limited firewater run off to Warehouse.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* I implement MoU/PPG18 wherever possible.
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* Planning stage or as early as possible during site development.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Before, however decisions will often be incident dependent.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* Major chemical sites in North West have these plans, e.g. ICI and Shell.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* Limited.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* Not known.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* They are being developed where Agency resources permit.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* Limited.
57	All	*In your opinion, who should be involved in making the emergency plan?* Agency/FS/Site Owner Developer.
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* FS/Agency/Local Authority/Water Utility Company.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* FS/Agency/LA/Site Owner or Occupier.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* Site Occupier/Agency/LA/Utility Company/Neighbour Organisations.
61		Additional notes:

		Sites to be covered by controlled burn guidance
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* These sites carry an on site emergency plan, detailing actions to be taken in the event of a fire.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Any site posing a significant threat of environmental pollution to a sensitive area.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* Toxic materials, marine pollutants, Red List chemicals, pesticides.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* Location dependent. *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* As a general guide yes, but always need to consider if an area has a high environmental vulnerability.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Yes.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* At their discretion. • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?*
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* Pesticide stores. *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Farm building.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* Not to my knowledge.
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Not known

71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* This could be included in terms of guidance in PPGN on 'dealing with spillages on highways'.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* Risk assessment is the preferred option to ensure consistency. Limited Agency resources necessitate this approach.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* With respect to the latter two acts, the legislation will take precedence.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* No response given
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* No response given
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* No response given
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* No response given
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* No response given

82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns? (N.B. Get copies if possible)* No response given
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* Question not applicable to Environment Agency.
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* No response given
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Time resource consequence for Agency staff required to stay in attendance at a controlled burn.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* Question not applicable to Environment Agency.
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* Question not applicable to Environment Agency.
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to Environment Agency.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to Environment Agency.

92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Planning requirement would be a financial burden, but this would be required even if controlled burn not an option.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to Environment Agency.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* No response given
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to Environment Agency.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* So long as public/media are briefed on reasons for a controlled burn, there should only be a positive impact.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* So long as legislation is complied with, there should be no impact.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* Only applicable if a site directly influences nearby public.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* No public involvement.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Advice through Police.

102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Press announcements, public addresses.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not a problem so long as briefing is implemented.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Environment Agency, Midlands Region	**Date: 28 July & 5 August 1999**
Individual interviewed: Alastair Picken & John Batty	**Interviewed by: J Pullen**
	Interview mode: Written response

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Consult/liase with OiC at incident over environmental concerns. Decision taken by OiC over controlled burn.
2	All	*To what extent are you personally involved in fire incidents?* Not at all at an operational level at present. However, as an EPO, attended incidents that impact on Agency.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* As perceived by *me,* it is a decision/action taken to minimise the environmental impact that could potentially occur as a result of firewater run off.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* N/A
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* N/A
6	FS	*How often are procedures reviewed?* N/A
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Under normal circumstances the FS OiC perhaps in consultation with EA.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* In my limited experience of actual controlled burns, the situation works well. However, there will be occasions where EPOs are not present.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making? Who makes the decision as to whether controlled water is at risk?* Yes to groundwater. Not trained to determine air pollution. The EPO makes the decision as to whether controlled water is at risk.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Yes, although where an EPO is not on site, there is the potential for a wrong decision to be made.

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Appropriate: (where life not at risk/property beyond salvage). Where chemicals e.g. list I's and II's to run to controlled waters. Where would impact on a potable supply intake and other abstractions. Where could knockout STW (with the consequence of untreated sewage passing to controlled waters). Inappropriate: Life is at risk. Property at risk (where other remedial action is in place).
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* No *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Not in my experience.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* There are very few incidents where the Fire Service will know if containment systems exist.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Could possibly do with some guidelines that all parties sign up to.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* Yes. Fire control notifies Agency control room as per MoU and beyond.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* The MoU is not definitive, therefore there are other incidents that Agency could require notification.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* Agency for controlled waters/land/air impacts (where they are not the remit of LAs, e.g. IPC sites/special waste).
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Needs careful management/liaison with affected parties .
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Difficult to quantify: each case is different.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* As 23
25	All	*Does your organisation presently have a policy on controlled burn?* No
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* To plan for a fire and consequences, therefore take action to install PP mechanisms/installations/maps/procedures.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* N/A
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Not regular. Potentially for increased joint site visits, etc. to high-risk sites. MoU will drive.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* Have attended many incidents where pollutants have entered rivers via drainage systems in Birmingham. Impact may be both extensive and protracted. *All* high-risk sites need to be identified.
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* No, this is a wide-reaching problem with few people thinking groundwater. Trying to improve with ground water maps being passed to fire brigades.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* No - very difficult questions to address.

37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* As 37
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* None available in timeframe.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Region Pollution Incident database records outline details. Greater detail in EPO's notebooks. Not forms. Will be NIRS.
41	FS	*What is the number of all fires in the UK/ your Region?* N/A
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving≥4 pumps with ≥2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Depends on location/substances involved (quantity/conc.)
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Unable to provide this data. PI database: cause = fire?
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the records are kept?* Yes (with a lot of work). Not in time frame.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Infrequent, both national and regional.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* Brigade by brigade, then division by division in some instances.
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Barn fires are most common application. No details to hand.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* Yes

50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* As soon as possible. MoU should drive.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Both - dependent on site structure e.g. out-of-town stores (warehouses) designed to let burn. Planning and incident.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* None that I am aware of.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* Not significantly other than BASIS sites in our experience.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* Very few to date.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* No - once again MoU should drive this.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* Infrequently
57	All	*In your opinion, who should be involved in making the emergency plan?* All relevant parties
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* [no response received]
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* All relevant parties
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* All relevant parties
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* This area of MoU/guidance still requires development.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Sites are wide-ranging both in size/usage but also location plays part - local input EA/FS is essential to provide listings.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* List Is, Is, etc. Largely depends on risk presented by quantities/receptors, etc.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* As first cut.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Not necessarily.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* Yes • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* Yes • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* Yes • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* No • *Any other classification of sites? e.g. B1 industrial use?* Possibly • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* Not initially
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* Unable to answer. *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* This is a growing area of concern.

69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been?* No. *If not, when is this expected?* Unable to answer.
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Unable to answer.
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* This may present a conflict of interest with police over traffic management.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* Unable to answer, but Agency is increasingly moving to a risk-based approach to environmental protection.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* Part of advice to FS will include legal aspects of chosen strategy.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* All practicable action to minimise impact must be taken.
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* Unable to answer at present.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* [no response received]
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* [no response received]
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* No obligations or policy. Attitudes vary. *Are the obligations for your organisation enforcement or contractual?* Enforcement.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* [no response received]
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* Not easily. I cannot recall any in Midlands.
86		Additional notes:

Costs of controlled burns to the Agency, industry, fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* [no response received]
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A.
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A.
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.

91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy?* Potentially additional work forms part of pollution prevention guidance. *Would this differ for controlled burn compared to putting the fire out in the normal way?* Yes.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unable to quantify.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unable to answer.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Possibly.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* Depends on site circumstances.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* We would advise emergency services but not primary player.

101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* No firm views at present.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Variety of means - recent experience drawn from flooding incidents suggests existing methods are not always perceived as adequate.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Site specific I suggest.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* **No**
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* N/A
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* N/A
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* N/A
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* N/A
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* N/A
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* N/A
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* N/A
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* N/A
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* N/A
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* N/A
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Environment Agency Thames Region	**Date: 2 Feb 1999**
Individual interviewed: Bruce McGlashan/ Stewart Ower	**Interviewed by: J Pullen**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Pollution control, i.e. minimising preventing impact of fire on environment.
2	All	*To what extent are you personally involved in fire incidents?* Follow up. Also responsible for PPG 18 Audit of Incidents.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* Fire is allowed to burn in a controlled manner to prevent/minimise pollution.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* N/A
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* N/A
6	FS	*How often are procedures reviewed?* N/A
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Fire Service Incident Commander: Agency only advises as in MoU
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* I believe the decision must be with the Fire Officer, however pre-planning will help.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* Must be the Environment Agency.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* At the fireground, yes; although would like to see far more emphasis on pre-planning/pollution prevention work.

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Threat to intakes or important wildlife habitat must be considered against threat to life/health and in some cases important building. Each situation will need to be assessed individually. The benefit of controlled burn presenting less risk to fire fighters is obviously relevant, though not a brief for this project.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Agency has to consider cost-benefit. This would include cost of environmental damage. Can't answer second question.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* Yes - in many cases brigades will not know if there are containment facilities available. In other cases (particularly smaller sites) no. No mention of sprinklers: fitting of sprinklers could prevent fire i.e reduce need to worry about Controlled Burn.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* The CIRIA report gives detailed guidance on the construction of fire water facilities, as well as risk assessment. Less on controlled burn.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* Guidelines for contacting the Agency are given in the MoU, which are modified to meet our local needs i.e. higher in London. These procedures generally work very well.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Yes, although as an author I would say that! However, now very few occasions when the Agency is not contacted about an incident we are interested in.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* Local Authority and owner. Possibly press if present, as well as Emergency Services, Press.
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes, essential on many sites.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Pollution of the Environment are trying to prevent it using controlled burn where appropriate.
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Important: the number of Cat 1 incidents following fires (see Incident Report) supports this.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Obviously public health must come first, however effect on public water supplies may have public health effects as well, e.g. interruption and for contamination of supply.
25	All	*Does your organisation presently have a policy on controlled burn?* Not really, although mentioned in MoU.
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* Set out in Water Resource Act i.e. it is an offence to cause pollution. We would require these groups to assist us e.g. provision of relevant information.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* N/A
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Very regular, both locally and nationally.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* Primarily environmental. The number of Cat 1 incidents following fires supports the need for further guidance/action in this area.

35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* No.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* No, hence this project.
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* No, because there is none specifically on controlled burn.
38	All	*Are there specific fire incidents which illustrate the benefits or disbenefits of current practice? (N.B. Get details)* See examples provided separately.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Agency currently keeps a database of water pollution incidents. Will have a database shortly of all incidents dealt with by Agency.
41	FS	*What is the number of all fires in the UK/ your Region?* Recorded incidents (water pollution) involving fire in Thames Region in 1998 were: Cat 1 = 0; Cat 2 = 4; Cat 3 = 60; Cat 4 = 164.
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Figure okay as a guide. A small fire involving a drum of hazardous materials may be enough to cause us problems.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Don't know.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* Records on database. Fire Service currently report 10% of all incidents to Agency.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Limited, although growing particularly in Agency/Fire Service.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* Not sure.
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* No many. Although see incident at Newbury for details.
48		Additional notes:

		Nature of emergency plans used in controlled burns
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* Yes.
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* During developments at new sites. At existing sites following risk assessment indicating possible problems. Plan should be developed.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Ideally before, but in reality particularly at small sites likely to be on Fire ground.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* BASIS sites. I believe some of the large chemical companies have also made such plans.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* On a limited basis, we have to develop this with individual Brigades.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* A very limited number, only ones would be for sites covered under regulations. Some sites do have plans and will supply if requested.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* Occasionally, although usually only as required under legislation e.g. CIMAH or Code of Practice or Scheme e.g. BASIS.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* Occasionally.
57	All	*In your opinion, who should be involved in making the emergency plan?* Agency, Fire Service, Operator, insurer and probably LA. Possibly water company.
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* As above. The operator ideally should draw up plan.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* Parties involved in its development i.e. those likely to be affected. Also public where legislation specifies.

60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* This requested earlier. See answer to 19.
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* Usually Agency Officer instinct, but risk assessment tools such as OPRA also used.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Examples would include timber-treatment sites, type dumps, metal finishers, chemical warehouses, but pollution from fire has come from sites storing pet food and incident involving RTA/need risk assessment.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* List 1, List 2, other controlled substances, but also high BOD, oils.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* Again difficult as will also be affected by target, ie. small sensitive watercourse, large less sensitive watercourse will affect threshold.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from Part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Yes.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* Highest attention should be given to sites with highest risk.
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn? (e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Main issue is to raise awareness. DIY superstores are certainly a risk.

69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* This is currently being looked at and will hopefully begin next year.
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Timber industry has excellent Code of Practice which already covers controlled burn, although could be in more detail. BASIS, timber treatment and possibly metal finishing. (All probably need more detail though).
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* Definitely - see the M25 incident. Work is currently being undertaken on identifying high-risk areas of M25 involving DETR/Highways Agency. Also database of control measures on highways to be worked on.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* There is the VSI scheme, which looks at firewater run-off. OPRA should be applicable to controlled burn. However, at smaller sites a simple approach is probably all that is required.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes - if site presents no hazard e.g. low toxicity chemicals okay to a major STW, could be excluded.
74		Additional notes:

	Legal basis of controlled burns	
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* There is a conflict in the legislation, i.e. fire service have a duty to protect property. This is not a defence in WRA 91 or EPA 90. Protection of life and health is however covered.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* Potential serious. Needs to be reviewed. Also cost to Fire Service not rechargeable in my opinion under 161.
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* See above. This potential conflict needs to be looked at.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* Possibly Groundwater Directive.

79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* COMAH, IPPC, IPC and possibly Works Notice Provision.
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* 1. Where a site poses a risk through fire, the Agency wishes to see the company take appropriate control measures and following legislation/guidance where applicable. 2. To enforce legislation.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* WRA 91, EPA90, MoU and with Fire Service PPG 18.
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* Key question?
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* There are none as far as I am aware.
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Agency could potentially be sued if advising controlled burn - by operators/insurer, or could be held to account by water company if pollution results and Agency did not advice controlled burn. Agency would state that cost of allowing building to burn may be far less than pollution cost from Agency, contractors and other affected parties, e.g. water companies.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A

89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Obviously additional costs although some maybe recovered through regulation charges e.g. IPC. However, prevention of serious incidents may save Agency money.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Prevention of incident may save Agency money as not always possible to recover our costs.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* For Fire Service maybe a key issue - would need good PR to explain why adopting this approach.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Yes insurers/operator suing for not putting out fire (advising controlled burn).
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* A difficult area. Requirements under regulation would obviously need to be followed for others like LA to represent public interest. Any not statutory could cause difficulties with operators.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* Good PR and accurate and informative as possible.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Public Register requirements. Difficult to divulge other information as maybe confidential and not required under statute. Careful to avoid causing unnecessary alarm.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Required under COMAH, IPC, IPPC. Not so at other sites, although maybe covered by European Disclosure requirement. Must be wary of causing unnecessary disquiet.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Could be an issue. However would also be bad publicity from pollution. Need to ensure, therefore, Agency explains clearly why it is adopting this approach.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* N/A
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g. injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: BASIS	**Date: March 1999**
Individual interviewed: Rob Simpson	**Interviewed by: S Robson**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Pollution control, i.e. minimising preventing impact of fire on environment. None
2	All	*To what extent are you personally involved in fire incidents?* Follow up. Also responsible for PPG 18 Audit of Incidents. Not at all.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* Fire is allowed to burn in a controlled manner to prevent/minimise pollution. Question not applicable to BASIS.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* Question not applicable to BASIS.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* Question not applicable to BASIS.
6	FS	*How often are procedures reviewed?* Question not applicable to BASIS.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* Question not applicable to BASIS.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Question not applicable to BASIS.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* Yes
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* Question not applicable to BASIS.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Yes - EA and FPO make joint visits for BASIS purposes to approve stores.

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* No risk to life or property other than pesticide store itself. Burn at sufficiently high temperature to completely incinerate chemical residues.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* No. *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* It may do - FPO has last word.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* Question not applicable to BASIS.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Don't know.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* Question not applicable to Environment Agency.
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* The company itseld would contact BASIS in event of fire. EA may also wish to know registration status of company/store.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Not sure that implications of controlled burn have been considered.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* EA/BASIS/EHO/HSE
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes - should be in emergency contingency plan.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Will temp be sufficient for complete incineration of residues? 2. Are Fire Authority happy with it?
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Question not applicable to BASIS.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Question not applicable to BASIS.

25	All	*Does your organisation presently have a policy on controlled burn?* No.
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* Question not applicable to Environment Agency.
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* Question not applicable to Environment Agency.
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* Not known.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* Yes through DC meeting 3 times per year.
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes.
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes.
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Question not applicable to BASIS.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Regular DC meetings 3 times per year. Contact with local EA/FPO on ad hoc basis when necessary.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* No fires in recent experience.
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* Yes.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* Yes.
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* Risk to environment takes priority!
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* Not known.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Question not applicable to BASIS.
41	FS	*What is the number of all fires in the UK/ your Region?* Question not applicable to BASIS.
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Question not applicable to BASIS.

43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Question not applicable to BASIS.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* Not known.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Not known.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* N/A.
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* No fires in recent memory.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* Question not applicable to BASIS.
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* Question not applicable to BASIS.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Question not applicable to BASIS.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* Question not applicable to BASIS.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* Yes - emergency contingency plan required for <u>all</u> registered stores.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* All BASIS registered sites have emergency contingency plan and copies to all Emergency Services.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* Yes.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* Question not applicable to BASIS.
57	All	*In your opinion, who should be involved in making the emergency plan?* EA/FS/HSE or EHO/BASIS.

58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* As above.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* EA/Police/FS/BASIS/Local Authority.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* All above - in emergency contingency plan.
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* Don't know.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* All large pesticide stores.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* All pesticides with particular environmental risk.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* Not necessarily - quantity may not be relevent ..... to use.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Don't know.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* **Few are BASIS sites.** • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* **Don't know.** • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* **Don't know.** • *Any other classification of sites? e.g. B1 industrial use?* **Don't know.** • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* **Don't know.**

68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn? (e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* Not BASIS reg sites. *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Garden centres etc - not BASIS reg sites.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* Don't know.
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Don't know.
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* Don't know.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* All BASIS reg stores must have an emergency contingency plan.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes.
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* Question not applicable to BASIS.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* Question not applicable to BASIS.
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* Not sure.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* Question not applicable to BASIS.
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* Question not applicable to BASIS.
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* Would be advisory only.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* Controlled burn is not, at present, included in the A Cop (Maff Yellow Code).
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* Question not applicable to BASIS.
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* No fires involving pesticide stores.
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?* None
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* Question not applicable to BASIS.
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* Question not applicable to BASIS.
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to BASIS.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to BASIS.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Don't know.

93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Question not applicable to BASIS.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Don't know.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Don't know.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Don't know.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Don't know.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* None.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* Emergency services only.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* None - unless specifically required e.g. disaster planning under COMAH.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Don't know.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not sure.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* N/A
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* N/A
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* N/A
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* N/A
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* N/A
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* N/A
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* N/A
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* N/A
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* N/A
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* N/A
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?* N/A

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* N/A
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* N/A
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: CACFOA	**Date: 22 April 1999**
Individual interviewed: Mr Martin Chapman,	**Interviewed by: M Pullin**
Cheif Fire Officer	**Interview mode: Written submission**

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* An incident where the fire brigade attends and the fire is allowed to burn in a controlled manner because the alternative actions of extinguishing the fire may cause danger to life or have a detrimental effect on the environment.
2	All	*To what extent are you personally involved in fire incidents?*
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation*
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* CACFOA encourages liaison between fire brigades, the EA/local authorities and owners of sites to ensure that robust procedures are in place for early notification.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* CACFOA would encourage a joint risk assessment approach between fire brigades, EA/local authorities and the occupiers of sites considered to be a high risk with a pre-determined plan being produced which may include controlled burn.
6	FS	*How often are procedures reviewed?* The review of policies needs to be agreed through local liaison and form part of the initial policy.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* Not applicable for CACFOA to answer.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)*
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?*
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?*

11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?*

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* CACFOA believes that the circumstances surrounding each individual case needs to be considered. In general terms, the factors that need to be taken into account should cover the natural environment, life risks, season, climatic conditions and adjacent risks.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Where in liaison with EA/local authority and occupier a pre-determined plan is devised, cost implications such as the potential for litigation will need to be taken into account. In the end, the final decision needs to be reasonable given the circumstances of the case.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?*
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)*
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?*
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?*
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?*
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)*
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Each brigade needs to determine how best it will use it resources available to liaise with occupiers/owners and EA/local authority in ensuring that a fire strategy for the site covering fire safety, means of escape, firefighting tactics and containment are developed.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?*
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?*
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?*
25	All	*Does your organisation presently have a policy on controlled burn?*
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?*
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?*
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?*
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?*
30	All	*Do you feel your present level of involvement on this issue is adequate?*
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?*
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Controlled burn is a relatively new practice in the Fire Service. Those officers attending the Hazardous Substances Course at the Fire Service College receive an appreciation of the tactic. The course is only available to senior officers and it is junior offices that can be left vulnerable as it is not an exact science and will depend on the availability of professional guidance where a pre-determined plan has not been devised. Brigades are encouraged to ensure that local crews are aware of the damage to the natural environment which may occur as a result of firefighting run off water, airborne pollution etc.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?*
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?*
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?*
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?*
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?*

38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)*
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?*
41	FS	*What is the number of all fires in the UK/ your Region?*
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* The size of the incident should not be the arbiter of whether controlled burn is implemented. The circumstances surrounding the incident need to be considered and taken into account with any pre-determined plans.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Any question to brigades would need to define hazardous materials. Everything is hazardous in certain circumstances.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?*
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)*
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?*
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Not applicable for CACFOA to answer.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?*
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* See answer to question 3.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)*

52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)*
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?*
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?*
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?*
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?*
57	All	*In your opinion, who should be involved in making the emergency plan?*
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?*
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?*
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)*
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)*
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* CACFOA would welcome controlled burn guidance on those sites that use or store substances that are hazardous to the environment or where any contaminated firefighting run off water would be a particular hazard.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)*

65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?*
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;*
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?*
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc*
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?*
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)*
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?*
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?*
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?*
74		Additional notes:

		Legal basis of controlled burns
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* There is not duty placed on fire authorities to extinguish fires under the Fire Services Act 1947. However, fire authorities face litigation where their actions at an incident are judged to have made the incident worse (Capital and Counties v Hampshire County Council).
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).*
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?*
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.*
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?*
80		Additional notes:

		Legal obligations, policies and attitudes of organisations concerned with controlled burns
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?*
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)*
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?*
84		Additional notes:

		Number and nature of prosecutions involving controlled burns
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?*
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others

(If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)

87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?*
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?*
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).*
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.

96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?*
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)*
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?*
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?*
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?*
104		Additional notes:

Incident: **Date of Study:**
Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* This will much depend on the circumstances of the incident but in general, whereas controlled bur is a defensive tactic that is likely to require less resource, fire crews will need to be at the incident for much longer periods. This will be significant in rural brigade areas that rely on retained crews.
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*

115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*
117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* Not considered applicable for CACFOA to answer as they relate to incidents where respective brigades will provide the information.
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Avon Fire Brigade	**Date: 6 May 1999**
Individual interviewed: Divisional Commander,	**Interviewed by: M Pullin**
"S" Division	**Interview mode: Written Submission**

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* A tactical firefighting decision to allow a fire to burn itself out taking due consideration where appropriate to protect surrounding property/risks.
2	All	*To what extent are you personally involved in fire incidents?*
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?*
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* Any incident or occurrence that may have an environmental impact.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* This has become an inherent cultural facet using the MOU guidelines as minima. Yes (i) Controlled gas leak or flammable liquid where it is allowed to burn under controlled conditions until the supply can be isolated. (ii) Barn fires (iii) Large bonfires (iv) Initial tactical decision whilst awaiting the arrival of sufficient resources to effectively deal with a fire ie oil tank and awaiting foam supplies.
6	FS	*How often are procedures reviewed?* Seldom.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* Satisfactory.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Fire Service Incident Commander/Agency only advises is in ....
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?*
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?*

11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?*

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* The safety of personnel and when all other operational tactics, extinguishing efforts and the dynamic risk assessment undertaken has indicated a control burn as the best option.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* No - decisions made are based on the dynamic risk assessment and the most effective means of expediting the incident.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?*
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)*
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?*
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?*
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?*
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)*
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* No
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?*
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?*

24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?*
25	All	*Does your organisation presently have a policy on controlled burn?*
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?*
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?*
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?*
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?*
30	All	*Do you feel your present level of involvement on this issue is adequate?*
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?*
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* No - further awareness through additional training would always be welcomed to maintain and improve awareness in this important subject.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?*
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?*
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?*
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?*
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?*
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)*
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?*
41	FS	*What is the number of all fires in the UK/ your Region?*

42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Size should not form part of the assessment to activate a controlled burn.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* All may have some potential hazardous substances/materials stored within.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?*
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)*
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?*
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* GATX terminal Avonmouth. 1993.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?*
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* It is unlikely that such planning would include a controlled burn assessment, it is more probable that a controlled burn decision would be implemented as a result of the dynamic risk assessment or a radical change in circumstances.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)*
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)*
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?*
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?*

55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?*
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?*
57	All	*In your opinion, who should be involved in making the emergency plan?*
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?*
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?*
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)*
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)*
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* See No 10 response above.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)*
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?*
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;*

67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?*
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc*
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?*
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)*
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?*
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?*
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?*
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* Through case law, ie the risk assessment process versus the Fire Services Act 1947.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).*

77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?*
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.*
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?*
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?*
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)*
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?*
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?*
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?* (i) Firefighting activities and tactical decisions are based on safety of personnel and life risk considerations and not cost. (ii) No differences perceived.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?*

89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).*
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Significant impact leading to eventual site closure with loss of jobs.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Significant impact leading to eventual site closure with loss of jobs.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?*

100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)*
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?*
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?*
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?*
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* GATX Incident.
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Major Incident.
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* Petro-Chemical.
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* (i) Unleaded petrol (11 million gallons) (ii) CTC (7 million gallons) (iii) Chloroform (2 million gallons).
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* (i) Fire Service - 25 Pumping appliances & 8 Special appliances (ii) Local Authority various departments ie Occupational Health Department and Scientific Services (iii) H M Inspector of pollution (iv) HSE (v) Environment Agency. All agencies implemented their Major Emergency Response Plan.
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* Into the River Severn through site interceptors plus large scale airborne pollution as a result of the products of combustion caused by the involvement of a hydrocarbon product.
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* Refer to official reports compiled by HSE and Environment Agency.
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* As above.
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* Significant traumatic effect resulting in numerous complaints via political representatives.
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*

115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?* Fine £250,000 as a result of contravening HSAW Act 1974.
117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Royal Berks Fire & Rescue	**Date: 23 Feb 1999**
Individual interviewed: D G Tidbury, Brigade Training Officer	**Interviewed by: J Pullen**
	Interview mode: Compliled by JP from information submitted to M Pullin

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* **Mr Tidbury could only offer onformation on the Sun Chemicals incident. No other consideration to Controlled Burn in his fire brigade.**
2	All	*To what extent are you personally involved in fire incidents?*
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?*
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)*
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)*
6	FS	*How often are procedures reviewed?*
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?*
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)*
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?*
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?*
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?*

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)*
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?*
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?*
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)*
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?*
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?*
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?*
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)*
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?*
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?*
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?*
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?*

25	All	*Does your organisation presently have a policy on controlled burn?*
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?*
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?*
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?*
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?*
30	All	*Do you feel your present level of involvement on this issue is adequate?*
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?*
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)*
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?*
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?*
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?*
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?*
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?*
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* Sun Chemicals, Slough, June 1997
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?*
41	FS	*What is the number of all fires in the UK/ your Region?*
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)*

43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?*
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?*
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)*
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?*
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?*
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?*
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?*
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)*
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)*
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?*
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?*
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?*
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?*
57	All	*In your opinion, who should be involved in making the emergency plan?*

58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?*
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?*
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)*
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)*
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?*
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)*
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?*
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;*
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?*
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc*

69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?*
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)*
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?*
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?*
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?*
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?*
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).*
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?*
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.*
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?*
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?*

82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns? (N.B. Get copies if possible)*
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?*
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?*
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?*
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan? Does the owner understand what he has to insure?*
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).*
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?*
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*

94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?*
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?*
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)*
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?*
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?*
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?*
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* **Sun Chemicals, Slough, June 1997. Details provided.** **(N.B. This incident has been reviewed as a case study and details are given there).**
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Cleveland Fire Brigade	**Date: 11 Feb 1999**
Individual interviewed: A Dale, Divional Officer	**Interviewed by: M Pullin**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?*
2	All	*To what extent are you personally involved in fire incidents?* N/A or no response provided
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* A controlled burn is an incident involving fire where a limited, or nor firefighting action is taken and the product is allowed to burn off in a controlled manner.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* The Environment Agency is informed automatically for the following incidents a) Five pump incidents where two or more jets are in use b) Spillages of Hazchem listed products c) Low hazard spills with a pollution potential d) Petrol spillage over 100 litres e) Oil spills over 25 litres f) Any incident where foam is used g) Major incidents within combined drainage areas h) Incidents adjacent to water courses i) Incidents at identified risk sites
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* No policy in place, however, each incident is risk assessed and consultation is carried out with the EA before a decision is made.
6	FS	*How often are procedures reviewed?* N/A or no response provided
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A or no response provided
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* N/A or no response provided
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* N/A or no response provided
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* N/A or no response provided

11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* N/A or no response provided

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Appropriate a) Where the application of extinguishing medium may lead to the pollution of water courses, drainage systems, underground water supply etc. b) After consultation with the EA c) Incidents involving asbestos Inappropriate a) Life risk involved b) Fire spread likely c) Where the products produced from the burning material would damage the environment more than the extinguishing medium.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* No
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A or no response provided
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* N/A or no response provided
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A or no response provided
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* N/A or no response provided
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* N/A or no response provided
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes, where the safety of life is at risk. This will be established during the risk assessment at the incident.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* N/A or no response provided
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* N/A or no response provided
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* N/A or no response provided
25	All	*Does your organisation presently have a policy on controlled burn?* N/A or no response provided
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A or no response provided
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A or no response provided
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* N/A or no response provided
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A or no response provided
30	All	*Do you feel your present level of involvement on this issue is adequate?* N/A or no response provided
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* N/A or no response provided
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Levels of awareness vary, however, all officers have an understanding of environmental issues because of the type of industry within our area. Training would enhance the knowledge and therefore the performance of personnel.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* N/A or no response provided
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* N/A or no response provided
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* N/A or no response provided
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* N/A or no response provided
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* N/A or no response provided
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* N/A or no response provided
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* N/A or no response provided
41	FS	*What is the number of all fires in the UK/ your Region?* N/A or no response provided
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* The size of the incident is irrelevant. A full scene risk assessment must be carried out before a decision is made.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Unknown.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A or no response provided
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* N/A or no response provided
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* N/A or no response provided
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Mid 1980's. A toluene tanker overturned on a major road and its contents ignited. The CFO consulted with chemical experts and a decision was made to allow the contents to burn off.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* At the planning stage for new premises, mobile risk would depend upon the location an circumstances of each incident.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* N/A or no response provided

52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* N/A or no response provided
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A or no response provided
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* N/A or no response provided
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* N/A or no response provided
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A or no response provided
57	All	*In your opinion, who should be involved in making the emergency plan?* N/A or no response provided
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* N/A or no response provided
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* N/A or no response provided
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* N/A or no response provided
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* N/A or no response provided
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Isolated chemical sites, farm building or building storing pesticides.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* N/A or no response provided

65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* N/A or no response provided
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* N/A or no response provided
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* N/A or no response provided
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* N/A or no response provided
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* N/A or no response provided
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* N/A or no response provided
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* N/A or no response provided
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* N/A or no response provided
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* N/A or no response provided
74		Additional notes:

		Legal basis of controlled burns
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* FS Act 1947 does not state that fires must be extinguished. However, should a building be allowed to burn it is likely that the occupier or insurance company would take legal action against the Fire Authority.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A or no response provided
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* N/A or no response provided
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* N/A or no response provided
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* N/A or no response provided
80		Additional notes:

		Legal obligations, policies and attitudes of organisations concerned with controlled burns
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* N/A or no response provided
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* N/A or no response provided
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A or no response provided
84		Additional notes:

		Number and nature of prosecutions involving controlled burns
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* N/A or no response provided
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others

(If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)

87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* A longer attendance at an incident would impact on the fire cover throughout the brigade. This may be offset against a lower attendance and saving on foam which may have been used.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A or no response provided
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A or no response provided
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.

96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Unknown.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Unknown.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* N/A or no response provided
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* N/A or no response provided
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* N/A or no response provided
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* N/A or no response provided
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
104		Additional notes:

Incident: **Date of Study:**

Source data:

		Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* See Q47.
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* The nature of the incident.
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* Mobile risk on dual carriageway.
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* Toluene 5000 gallons (approx.)
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* Fire Brigade 10 pumps, 1 foam tender + covering officers + senior officers Local Authority Emergency Planning, Environmental Health Officer, Local Councilors Agency Site Operator, Chemical Experts (from site).
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* Liquid toluene ignited, spillage prior to ignition entered surface water drainage system. Quantities allowed to burn / spillage unknown.
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* Minimal amount of foam used, water run off from cooling allowed to enter drains. Environmental impact unknown.
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* This decision would not now be made without full consultation with an officer from the Environment Agency. With 'clean-up' companies now available and environmental protection equipment on hand, this type of fire would be extinguished, contained and contracts agreed to clean up the site.
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* Some concern from local residents (nearest housing 750 - 1000m). Press releases from LA and CFO given. Brigade not aware of any complaints received.

114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* N/A or no response provided
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* N/A or no response provided
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?* Unknown.
117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* It was considered that this action would have little impact on the environment.
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* N/A or no response provided
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Devon Fire & Rescue Service	**Date: 12 Feb 199**
Individual interviewed: Geoff Strawbridge, Assistant Divisional Officer, Operational Intelligence	**Interviewed by: M Pullin**
	Interview mode: Written submission

		Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* N/A or no response provided
2	All	*To what extent are you personally involved in fire incidents?* N/A or no response provided
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* A controlled burn is: "Any fire which, after consideration of all available options, was allowed to burn within defined boundaries under the supervision of competent persons".
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* The Fire Service Officer in Charge would request a representative from the Environment Agency at every incident with the potential to cause Environmental Damage.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* Yes, we liaise with all agencies when dealing upon 'let it burn' tactic.
6	FS	*How often are procedures reviewed?* Annually.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* By close liaison with all interested agencies the outcome is as satisfactory as is possible.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* N/A or no response provided
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* N/A or no response provided
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making? Who makes the decision as to whether controlled water is at risk?* N/A or no response provided
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* N/A or no response provided

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* i) Appropriate to let burn:- a) Human life at risk from firefighting options b) Low success forecast of extinguishing c) No life risk from letting burn d) Low risk of Environmental damage from fire e) High risk of Environmental damage from firefighting action f) Consideration of location, surrounding risks, occupancy, weather, process, community value and costs. ii) Inappropriate to allow Controlled Burn:- a) Human life at risk from fire b) High success forecast for extinguishing c) Low risk to firefighter engaged in firefighting d) High risk of Environmental damage from fire e) Low risk of Environmental damage from firefighting actions f) Consideration of location, surrounding risks, occupancy, weather, process, community value and costs.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Yes
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A or no response provided
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* N/A or no response provided
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A or no response provided
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* N/A or no response provided
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* N/A or no response provided
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes

21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* N/A or no response provided
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* N/A or no response provided
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* N/A or no response provided
25	All	*Does your organisation presently have a policy on controlled burn?* N/A or no response provided
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A or no response provided
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A or no response provided
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* N/A or no response provided
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A or no response provided
30	All	*Do you feel your present level of involvement on this issue is adequate?* N/A or no response provided
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* N/A or no response provided
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Addressed by specialist Haz-Mats officers responsible for policy, procedure and information.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* N/A or no response provided
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* N/A or no response provided
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* N/A or no response provided
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* N/A or no response provided
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* N/A or no response provided
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* N/A or no response provided
39		Additional notes: N/A or no response provided

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* N/A or no response provided
41	FS	*What is the number of all fires in the UK/ your Region?* N/A or no response provided
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Incident size is not a defining factor.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Dependant upon definition of Haz-Mat. All fires have potential Haz-Mats.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A or no response provided
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* N/A or no response provided
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* N/A or no response provided
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Detached, agricultural premises.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* At planning level for new risk. During risk inspection for existing risk.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* N/A or no response provided
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* N/A or no response provided
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A or no response provided

54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* N/A or no response provided
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* N/A or no response provided
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A or no response provided
57	All	*In your opinion, who should be involved in making the emergency plan?* N/A or no response provided
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* N/A or no response provided
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* N/A or no response provided
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* N/A or no response provided
61		Additional notes:

	Sites to be covered by controlled burn guidance	
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* N/A or no response provided
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* All commercial or special sites.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* N/A or no response provided
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* N/A or no response provided
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* N/A or no response provided

67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* N/A or no response provided
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn? (e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* N/A or no response provided
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* N/A or no response provided
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* N/A or no response provided
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* N/A or no response provided
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* N/A or no response provided
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* N/A or no response provided
74		Additional notes:

		Legal basis of controlled burns
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* 1947 Fire Service Act is not compromised by Risk Assessed Safe Systems of Work.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A or no response provided

77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* N/A or no response provided
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* N/A or no response provided
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* N/A or no response provided
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* N/A or no response provided
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* N/A or no response provided
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A or no response provided
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* N/A or no response provided
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?* Cost of prolonged attendances. Possibility of litigation action by property owners.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A or no response provided
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A or no response provided

90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Not known.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Not known.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* N/A or no response provided

100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* N/A or no response provided
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* N/A or no response provided
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* N/A or no response provided
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No.
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Categorised by incident nature.
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* See Q.12
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* Agri-Chems and feed stock.
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* Fire Service predetermined attendance plus agencies.
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* Smoke and fire water run off.
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* Not known.
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Officer experience and awareness.
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g. injury, mortality, morbidity* By agreement, no adverse effect
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* N/A or no response provided
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* N/A or no response provided
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?* Not known.

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* Yes.
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* Each would be assessed equally.
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Dorset Fire & Rescue Service	**Date: 14 April 1999**
Individual interviewed: I C Dominy, Assistant Chief Fire Officer	**Interviewed by: M Pullin**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* N/A or no response provided
2	All	*To what extent are you personally involved in fire incidents?* N/A or no response provided
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* An event whereby the fire is allowed to burn in a contained manner because the alternative actions of extinguishing the fire would have been deleterious effect on the environment.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* Robust procedures are in place in respect of hazardous materials contamination in respect of spillage and/or fire water run off. Airborne pollution arising from a fire associated with, for example chemicals or asbestos, is also notified.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* This service does not have such a policy in place. Consideration is given by the officer in charge to the effects of airborne pollution in the form of plumes, and notification is made to both the EA and LA on occasions of incidents associated with hazardous materials.
6	FS	*How often are procedures reviewed?* No policy. A policy will be determined which will include a review date.
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* No policy.
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* N/A or no response provided
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* N/A or no response provided
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* N/A or no response provided
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* N/A or no response provided

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Appropriate Option: A controlled burn might be appropriate for a fire involving a hazardous substance where the continued application of Firefighting media would cause greater environmental damage and risk to human life, e.g. pollution of water courses, groundwater aquifers drinking water supplies. Weather conditions would need to be appropriate and assessed to ensure that the wind strength and direction were such so as to take the plume away from for example large population centres. It is also essential to consider the buoyancy of the plume and whether changes such as rain, fog, or temperature change will affect the plume direction and height. A large cloud of toxic gases kept low on a cold and foggy night would be a consideration in respect of allowing to burn or extinguishing a fire. Inappropriate Option: A controlled burn would be inappropriate if such action caused a risk to life, or permitted uncontrolled fire spread leading to loss of property or increase in the impact upon the environment by spreading to and involving more hazardous materials / processes. A controlled burn would be inappropriate if the fall out was more damaging to the environment than the immediate local pollution effect caused by extinguishing the fire. For example the continued release of toxic gases that may act as a defoliant, affect arable crops due for human consumption or the wider food chain.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Cost has an implication on all that we do, but in the context of this study I believe that it should be viewed as relative to the expected outcomes. Very high costs are hard to justify in respect of minor pollution, however in action or inappropriate action may of course result in litigation with associated high costs. What is most important is whether or not the decision is appropriate and can be justified given the prevailing circumstances.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A or no response provided
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* N/A or no response provided
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A or no response provided
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* N/A or no response provided
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* N/A or no response provided

20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes. There are many locations where adequate facilities to deal with run off cannot be provided and where, as a result, serious pollution is a possibility. The risk assessment process of fire-safety planning should consider the possibility of controlled burn. I believe that all applications for new hazardous materials process locations should conform to standards that provide adequate provision to deal with firewater run off.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* N/A or no response provided
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* N/A or no response provided
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* N/A or no response provided
25	All	*Does your organisation presently have a policy on controlled burn?* N/A or no response provided
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A or no response provided
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A or no response provided
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* N/A or no response provided
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A or no response provided
30	All	*Do you feel your present level of involvement on this issue is adequate?* N/A or no response provided
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* N/A or no response provided
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* Officers have awareness of the issues and it is true to say that the awareness and understanding is improving continually. It is true to say that I believe that the level of knowledge needs to be improved to this end training is the solution. The issue in question is not of course an exact science and officers will always have to make a considered decision. That decision will of course have a greater chance of being correct in line with the level of understanding of the pros and cons of the issue and the availability of professional guidance on the ground.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* N/A or no response provided
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* N/A or no response provided
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* N/A or no response provided

36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* N/A or no response provided
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* N/A or no response provided
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* N/A or no response provided
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* N/A or no response provided
41	FS	*What is the number of all fires in the UK/ your Region?* N/A or no response provided
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* I do not believe that this question can be answered in these terms. The decision to permit a controlled burn needs to be taken with full consideration whether it is "appropriate or inappropriate". It is I would suggest, the outcome of that decision that is paramount and not the resources used to deal with the incident. However it is I believe safe to assume that a very small and easily contained fire would not of itself require consideration for a controlled burn.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* No more than 2% in this area.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A or no response provided
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* N/A or no response provided
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* N/A or no response provided
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* No decision has been taken in this Service to carry out a controlled burn of an incident involving stored material hazardous to the environment. An incident at the premises known as British Drug Houses in Poole was in danger of causing a major pollution problem particularly in respect of Poole Harbour. Action was taken to reduce the application of water to reduce the run off and allow for the transportation off site by tankers of contaminated run off. Further details are available on this incident but it is not considered a controlled burn in the true sense of the definition.
48		Additional notes:

Nature of emergency plans used in controlled burns

49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* Emergency Plans to include controlled burns should be developed when new tactical plans are first drawn up or a the review stage for existing plans. The review process is a fundamental time particularly as research will continue to develop understanding and ongoing awareness training will include outcomes from that research.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* N/A or no response provided
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* N/A or no response provided
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A or no response provided
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* N/A or no response provided
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* N/A or no response provided
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A or no response provided
57	All	*In your opinion, who should be involved in making the emergency plan?* N/A or no response provided
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* N/A or no response provided
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* N/A or no response provided
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* N/A or no response provided
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* N/A or no response provided

63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* It is considered that existing premises that are used in the production and or storage of materials that are hazardous to the environment and are not provided with appropriate run off containment facilities, should be covered by the guidance. In particular those premises associated with the farming industry for the storage of bulk agrochemicals that are located in environmentally sensitive areas.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* N/A or no response provided
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* N/A or no response provided
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* N/A or no response provided
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* N/A or no response provided
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* N/A or no response provided
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* N/A or no response provided
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* N/A or no response provided
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* N/A or no response provided

72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* N/A or no response provided
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* N/A or no response provided
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* This is purely a matter of perception as the act does not place a duty on fire services, maintained by Fire Authorities, to extinguish fires.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A or no response provided
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* N/A or no response provided
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* N/A or no response provided
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* N/A or no response provided
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* N/A or no response provided
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* N/A or no response provided
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A or no response provided
84		Additional notes:

Number and nature of prosecutions involving controlled burns

85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* N/A or no response provided
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Given that the number of fires that involve hazardous materials in this Authority are so very small, it would have little financial consequence at all. The Fire Authority would still need to maintain the existing resources for strategic cover and those costs would not be materially affected by a controlled burn policy. It is possible that the costs of individual fires may reduce because of a reduction in the resources attending the incident and associated cleaning / decontamination costs. However it is more probable that costs of individual fires would increase due to the need to commit fire crews for much longer periods of time during the burning process.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A or no response provided
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A or no response provided
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided

95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* N/A or no response provided
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* N/A or no response provided
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* N/A or no response provided
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* N/A or no response provided
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* N/A or no response provided
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
104		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Northants Fire & Rescue Service	**Date: 23.4.99**
Individual interviewed: Gerald Goldsack, County Ftre Officer	**Interviewed by: M Pullin**
	Interview mode: Written submission

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?*
2	All	*To what extent are you personally involved in fire incidents?* N/A or no response provided
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* A whole or partial allowance to burn, following consultation with other interesting parties
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* We always inform if the risk is real.
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* No - each incident is taken on its own merit. We are aware.
6	FS	*How often are procedures reviewed?* N/A
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* N/A or no response provided
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* N/A or no response provided
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* N/A or no response provided
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* N/A or no response provided

12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Public protection. Air against ground contamination. The consent of the property owner and the weight of loss against environmental damage and firefighter safety.
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* Yes but only one of the considerations.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A or no response provided
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* N/A or no response provided
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* N/A or no response provided
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* N/A or no response provided
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* N/A or no response provided
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* In the future it will come.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* N/A or no response provided
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* N/A or no response provided

24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* N/A or no response provided
25	All	*Does your organisation presently have a policy on controlled burn?* N/A or no response provided
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* N/A or no response provided
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* N/A or no response provided
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* N/A or no response provided
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* N/A or no response provided
30	All	*Do you feel your present level of involvement on this issue is adequate?* N/A or no response provided
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* N/A or no response provided
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* We are aware and of the additional pressures and litigation possibilities that come with it.
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* N/A or no response provided
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* N/A or no response provided
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* N/A or no response provided
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* N/A or no response provided
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* N/A or no response provided
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* N/A or no response provided
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* N/A or no response provided
41	FS	*What is the number of all fires in the UK/ your Region?* N/A or no response provided

42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Size does not necessarily come into it.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Probably more than we think could not place a figure on it.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A or no response provided
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* N/A or no response provided
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* N/A or no response provided
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* None as far as I am aware, only rural .....
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* N/A or no response provided
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* At an early stage, subject to full discussion with all interested parties. So often an early stage will not be within the first hour.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* N/A or no response provided
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* N/A or no response provided
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A or no response provided

54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* N/A or no response provided
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* N/A or no response provided
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A or no response provided
57	All	*In your opinion, who should be involved in making the emergency plan?* N/A or no response provided
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* N/A or no response provided
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* N/A or no response provided
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* N/A or no response provided
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* N/A or no response provided
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* C.I.M.A.H., C.O.M.A.H. Specific risks based on Operational Risk Assessment.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* N/A or no response provided
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* N/A or no response provided
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* N/A or no response provided

67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* N/A or no response provided
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* N/A or no response provided
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* N/A or no response provided
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* N/A or no response provided
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* N/A or no response provided
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* N/A or no response provided
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* N/A or no response provided
74		Additional notes:

	Legal basis of controlled burns	
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1947, the Water Resources Act 1991 and the Environmental Protection Act 1990?* With difficulty as it was little thought about in 1947.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A or no response provided

77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* N/A or no response provided
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* N/A or no response provided
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* N/A or no response provided
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?* N/A or no response provided
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* N/A or no response provided
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A or no response provided
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* N/A or no response provided
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Potentially cheaper outcome for us. Unless we are taken to court for the actions wer took or do not take.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A or no response provided

89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A or no response provided
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* N/A
98		Additional notes:

Involvement of the public at locations where controlled burns may occur

99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* N/A or no response provided
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* N/A or no response provided
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* N/A or no response provided
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* N/A or no response provided
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A or no response provided
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* N/A
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?* N/A
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* N/A
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* N/A
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?* N/A
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* N/A
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Will be some of each based on best knowledge available.
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity* N/A
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* N/A or no response provided
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* N/A or no response provided
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?* N/A

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* N/A
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* N/A
119		Additional notes:

CONTROLLED BURN RESEARCH PROJECT

Minutes of Meeting for Stage 1 - Information Gathering Stage 14.00h, 2 June 1999, at HSE, Daniel House, Bootle.

Attendees:

Health & Safety Executive
Susan McCready-Shea (SMS) - Safety Policy Directorate
Jayne Sturmey (JS) - Safety Policy Directorate
Dave Picken (DP) - Chemical and Hazardous Installations Division
Ian McKay (IM) - Chemical and Hazardous Installations Division

Stanger Science & Environment
Jon Pullen (JCP) - Project Manager

Copies to: Bruce McGlashan (BMcG), Environment Agency Project Manager

1. Minutes of Previous Meeting
N/A.

2. Project Overview
JCP reviewed the aims, objectives and structure of Stage 1 (Information Gathering Stage) of the project and outlined later stages for drawing up guidance.

3. General Concerns of HSE
DP stated that HSE's fundamental view is that risks to people must take precedence over damage to the environment. Whatever the damage to the environment, need to consider if there are going to be risks to public, firefighters, etc.
JCP said that the principle of avoiding immediate health and safety risks was not a contentious point based on feedback from other interested parties.
On practice of controlled burn, DP expects types of premises that can be allowed to burn to the ground to be far and few between, especially if can't be absolutely sure of what is inside. There is also a social context: peoples livelihoods at risk; possible civil litigation from site owners. The decision cannot be made in isolation. Thinks it would be difficult to sell to the public a principle that might allow the Fire Brigade to watch-on while a premises goes up in smoke. Also thinks there would be difficulty in getting the Fire Brigades to buy-into any guidance of this sort: their reflex action would be to put it out.
DP believes the BPEO should not be made during the incident, it should be part of the risk assessment and emergency plan. Also, if there is no water or SSSI nearby then shouldn't really have to worry. Even big fires start as little fires: can't works Fire Brigades be encouraged to deal with these? There is a danger that they will argue for hours about whether to put it out or not.
DP of the opinion that controlled burn is a difficult principle and could rebound badly the first time someone dies. Is the Agency being realistic? There is never a situation where plans work ideally. People panic, and the firefighters themselves have little expertise in controlled-burn philosophy. The statutory obligation of the fire service is to save life, not property.

4. Application of Risk-Based Approach
JCP mentioned that it was possible that guidance would be a risk-based approach to applying the principle, perhaps with a screening procedure for separating sites with insignificant risk.

JS mentioned that on the issue of COMAH, the DETR made contributions to the environmental chapter in the emergency planning guidance.
IM recommended that no site should be excluded from a risk-assessment based approach. Also noted that in some cases the properties of the material/substance are such that the option (extinguish or let burn) would be clear. The toxicological properties of the substances on the site would be discovered at the planning stage.
DP thought an important issue was not whether or not to fight the fire, but rather whether to fight it with water or foam. Can douse a road tanker with foam very easily.
SMS thought that risk assessment might be something all industry sectors need to think about.
IM believed that there needs to be a real net benefit for one option or the other (extinguish or let burn) for it to be worthwhile doing the assessment.
SMS asked which other organisations we had sought views from. JCP outlined the contact list of interested parties/organistaions. DP thought it essential that view are sought from the Police, the Emergency Planning Society and the Society of Industrial Emergency Services Officers. (IM to provide EPS and SIESO contacts to JCP.) Also perhaps the National Union of Farmers.

5. Past Incidents
JCP asked about any incidents that might possibly be used as case studies.
DP said that he was not aware of any incidents at all where controlled burn was applied for environmental reasons, only safety: mentioned an incident at Grangemouth, where a gas leak was allowed to burn for safety reasons. In fact, HSE refused to sign up to EA pollution run-off guidance and advised inspectors to disregard it because HSE feared possible risks to public safety.
IM mentioned a fire at Milford Haven, where a floating tank was allowed to burn.
DP advised that apart from Allied Colloids, where there was an air pollution problem, there are no HSE reports of incidents that have resulted in environmental damage.

6. Application of Fire Plans
JP asked about the HSE`s views on emergency plans and their possible use for controlled burn, and which sites in the HSE`s view should be covered.
DP replied that for COMAH sites (400-500 top-tier sites) the emergency plan involves statutory consultation with amongst others the Fire Brigade, Police and the joint competent authority (HSE and EA/SEPA). Not convinced that controlled burn could be covered, but if it was "do-able" then it would have to be done at this stage. The HSE will demand certain things in the emergency plan and the safety report (under COMAH Regs), but don't second guess the plan detail and don't criticise it. The Fire Brigades are the experts.
IM though that the whole issue was one of prior planning. Also, fire plan might be something that would be appropriate to put into the Safety Report.
DP wondered how the Agency and Fire Brigades would identify and catch the thousands of IPPC sites?
IM doesn't see how the Agency could hope to identify all (or necessarily the nastiest) of the sites for controlled burn. Partly because the threshold levels for notification do not always take into account environmental damage (e.g. milk). Farms would be a good sector to concentrate on.
DP believed industry would complain loudly if the principle was transferred down to smaller sites.
DP pointed out that a high-risk site in environmental terms is very location-specific, e.g. whether have watercourses nearby. So it's difficult to say, for example, that all timber treatment sites are high risk. For COMAH regulations, HSE took the view that if an ecotoxic

chemical could not get through the route (e.g. watercourse) or to the target (e.g. seals) then this would not be a high risk. Hence proximity is an important factor.

7. Public Involvement and Consultation

JCP asked about the HSE`s view on public involvement/participation on emergency plans for fires, and who should be consulted on/ involved in making such fire plans.

IM described how for COMAH sites the public are involved and consulted about the Off-Site Plan and have a right to see the Safety Report. In the HSE`s view, any controlled-burn fire plans would also have to go through the public consultation mill. (The HSE tells the Local Authority of a minimum radius that defines the term "public", but the LA may then extend this to consolidate into wards, borough, etc. The LA must have in place arrangements to warn the public of an incident and tell them when it's over.

DP questioned how could the public be involved at smaller sites? It is not practical to have public information zones around, e.g. farms. The Agencies (EA/SEPA) have existing routes of consultation.

DP thinks it is up to the Agency who they consult (- they should have enough faith in their BPEO decision process to stand up in court and defend it. Having said that, HSE would want to be consulted.) However the Agency could not impose the approval/consultation route, because other enforcing bodies or statutory bodies are involved, e.g. Fire Brigades elected bodies.

J.C. Pullen
7 June 1999

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Leicester City Council EHO	**Date: 21 Dec 1998**
Individual interviewed: Steve Quick	**Interviewed by: J Pullen**
	Interview mode: Telephone

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* To provide advice and assistance: 1. where there is potential risk to life, limb and property; 2. for protection of the environment (e.g. on substances, dispersion, advising Fire Service (FS) on environmental effects of washing milk into the river); 3. liaison with City Council services (e.g. to trigger the emergency plan or evacuation); 4. The Council is the relevant enforcing authority in some situations (e.g. Petroleum Licensing, HSAWA).
2	All	*To what extent are you personally involved in fire incidents?* One of a group of officers on rota in liaison with the FS. Also involved at 2 CIMAH sites.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* Not tried to put an organisational definition to it. Could be "*when there are benefits to letting it burn out*".
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* N/A
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* N/A
6	FS	*How often are procedures reviewed?* N/A
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Fire Officer in Charge (FOiC) but made on the advice of other agencies/organisations present.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* Have only been involved in one controlled burn, but several other incidents, e.g. spillages. Yes, have very good working relationship with other agencies. The latter will actively seek LCC's views and concerns.

10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* Yes.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Not sure if there are any controlled waters in the city. Don't know enough about the water side of this to give a balanced view. Would need to liase and work things up.
12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Risk to life, then health. Then environmental damage – both short-term and long-term (the latter sometimes overlooked by FS). Then economic (e.g. more cost-effective to let burn out).
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* No, don't try to quantify risks to health financially. Might try to recover the costs though. *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* N/A
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Probably not. Nothing to date on the balance of financial v. environmental impact; few desk-top studies/case studies that have involved LAs; PPG18 is a good step forward, but need spin-offs in terms of strong guidance in working together (agencies) in incidents.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* It is effectively like dealing with 3 different agencies for water, land and air. Field liaison is very good and officers on very good terms for waste and air-quality. Water less so, but possibly due to personnel changes. Could be better at management level.
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* Standing arrangements with FS that they will contact LCC around the clock for environmentally-threatening incidents, spillages, etc. Not sure if this follows PPG18.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Large fires without serious consequences (e.g. haystack) *cf* small serious fires (e.g. transformer) means simple thresholds like number of pumps not sufficient. Needs to be identified by Station Officer. Awareness training needed for middle-ranking FS staff.

19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* To all agencies present at the incident (for a Bronze/Silver-Level incident) and they all deal with it according to their roles. Incident briefings to the media are usually joint press meetings (e.g. LA, EA, FS). Should be picked up in exercises and training.
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Doesn't know too much about F/S planning.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Officially, the Council does not have an attitude. Personally, Controlled Burn is sometimes the least of two evils.
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* Fairly. Have put some work into this, and carried out sampling and monitoring, e.g. local railway carriage fire involving asbestos. The Council takes the issue very seriously.
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Very seriously. For example asbestos and PCBs. The Council's commitment evidenced by its protocol on carbon-fibre fire incidents (Leicestershire & Rutland Emergency Planning Group).
25	All	*Does your organisation presently have a policy on controlled burn?* No, not official policy – an operational incident decision, with the officer making the best professional decision in the circumstances. Wouldn't want a restrictive policy.
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* Yes (but only because sent out with this checklist!)
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* The principles would seem to fit very well with the Council, which will have a closer involvement now a unitary authority. No great concerns about the PPG. It is a valid next step and validates what has happened so far.
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* The Council doesn't really deal with insurers, but they appear to have been very responsible, and will not underwrite if there's a problem. Site owner usually concerned with immediate problem.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* Do have a dialogue (in the form of emergency exercises) with FS and EA, but not an *active* dialogue. Could be better. Have not discussed Controlled Burn specifically.

30	All	*Do you feel your present level of involvement on this issue is adequate?* Difficult – might never have another incident, in which case Yes! Emergency planning gives a certain priority, but this issue will always be competing with others, and involvement can never be enough.
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes, internally provided with sufficient information. Defined role in emergency plan. Water not addressed as comprehensively as air (as the Council has responsibility for waste and air, but not water).
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* N/A
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Work through Emergency Planning Officers. These procedures have not let them down yet.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* Experience tells me: plan ahead and then some more! On the legal impact: have not prosecuted (under e.g. Clean Air Act) for smoke from accidental (as opposed to illegal burning) fires. May consider doing it though if people were injured. On emotional impact: prompt breifings need to be given to media and public. Need more consistency and decide who tells the media what. Maybe this needs to be covered in PPG18?
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* No, probably not (though I'm not a groundwater expert). We defer to the EA on this. To my knowledge, no water abstraction points around here.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* PPG18 is not prescriptive – professional decision for officers to weigh up. PPG to provide guidance on the issues and relevant factors to allow balanced judgements.
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* As above. PPG`s main job is to make people aware of the issues, so decisions can be made quickly.
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* Vinyl chloride exercise. Timber yard – arsenic pentoxide next to river. Bunker full of trated effluents on fire. CIMAH site – kept flames down sufficiently to avoid burning overhead lines, but avoided run-off by damming with sand bags.
39		Additional notes:

Quantification of the scale of controlled burns in the UK

40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Not formalised, but keep records (go on property files).
41	FS	*What is the number of all fires in the UK/ your Region?* N/A.
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving ≥4 pumps with ≥2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* N/A.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Not sure.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the records are kept?* N/A.
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Locally, not a specific policy but an operational decision based on circumstances.
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?*
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* Arsenic pentoxide incident. No personal knowledge of others.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* Only saw a copy of MoU with this checklist.
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* Immediately. Such a diversity of situations/sites, it would be impractical to have an emergency plan for all sites. Logistics of holding all these would be impossible for LA/FS.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Incident-specific decisions based on guidance, e.g. prevailing wind direction at the time.

52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* CIMAH sites – controlled burn is identified in this.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A.
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* Haven't come across any, but doesn`t really get involved in site-specific emergency plans (as opposed to the city-centre emergency plan).
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* As Q54.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A.
57	All	*In your opinion, who should be involved in making the emergency plan?* Operator, FS, EA and LA (in some situations – especially where air quality is a likely issue).
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* Very depemndant on the nature of the plan and premises and the scale. Large companies should have adequate expertise; smaller ones may need help from the authorities.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* The FS, the LA in some instances. Logistical problem if all sites lodged a plan with LA.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* Everybody that needs to know. Refer Q19.
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* Don`t think they are..
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Any sites with materials mentioned in Q64. Perhaps with a volume threshold.

64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* Could use a list of substances used on site e.g. pesticides, asbestos, carbon fibre, arsenic pentoxide.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* Substance and location specific issue. Two-stage process: e.g. first draw-up list of substances; secondly, do risk assessment on hazardous substances. If no receptors near site, then no real risk and no plan needed.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Yes. Any guidance should be broad.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* Some of the above may pose a serious safety risk, but not necessarily an environmental risk. So not necessarily a valid guide to the need for requirement for an emergency plan. • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* Depends on the site, e.g. what`s in a foundry that would be a serious environmental risk? Need to think about the list oof environmentally-damaging substances – more guidance needed. • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* Same comment, separate issue. • *Any other classification of sites? e.g. B1 industrial use?* Too big. Could not cope with this number. • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* Not sure. Need to have a two-stage site-specific risk assessment.
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Not necessarily an industry specific thing. Within an industry may have variety of substances/quantities, and different locations/sensitivities.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* N/A
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Don't know – haven't come across any.

71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* Yes, e.g. extension of HazChem symbols (Carriage of dangerous Goods Act). Even some non-hazardous class products could be severly damaging. Perhaps a single symbol showing high COD/BOD?
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* Risk-based approach would be most suitable for Controlled Burn. Not in favour of prescriptive approach – would need to be drawn-up in advance and can't take account of changes and variations on site, etc.
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Yes. Otherwise the numbers of sites would be unmanageable, and unwarranted.
74		Additional notes:

	Legal basis of controlled burns	
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* Clean Air Act 1993 could be relevant – release of dark smoke from business premises. In the past have not prosecuted for accidental fires. Could be commiting an offence by not minimising the release of dark smoke. A defence could be "inadvertent release". Needs to be an understanding of the "lesser of evils" for a Controlled Burn strategy, i.e. will minimise damage, but will occur somewhere.
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* Need to run in parallel. Some may need all three, some won't.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* N/A
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* N/A
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* No official policies – have not had enough incidents for it to become an issue. *Are the obligations for your organisation enforcement or contractual?* Can't see enforcement action being taken on accidental fires.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns?* *(N.B. Get copies if possible)* Clean Air Act 1993 deals with direct offences (these are few of these under EPA – mostly deal with abatement notices, which are not relevant). HSAWA: how did the fire start and were persons endangered?
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* No.
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* None in general to the Council. Don't consider costs to the Council to be a major issue. No significant difference between the two options.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A

90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Would depend on how far this went. Would expect that staff are sufficiently well trained to require little further. But may need to have joint exercises with FS, and this would be a big increase in cost. Would increase further if involved recording/auditing/training.
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Staff costs not a big issue for the Council (maybe the officer in attendance would spend a few hours more on site than if the FS put the fire out). Prosecutions are based solely on objective criteria on whether prosecution warranted.
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Image and relationship costs not relevant for Council. PR shouldn't be a problem if Controlled Burn becomes more widely used (and explained) as a tactic. Public should accept it. Dependant on mutual trust – expect to stand side-by-side with FS and EA at a press conference. Needs to be a decision all can agree on. (Disagreements haven't yet arisen.)
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Legal liability not an issue for the Council. Possibly important for the insurers, e.g. if Controlled Burn results in loss of £20m of equipment that could otherwise have been salvaged. Needs to be taken account of in the Controlled Burn decision.
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* Wouldn't want to preclude the public, but have to accept that sometimes professionals will need to make unpopular decisions in the public's best interests. The emergency plan should be a public document, though wouldn't want to send a copy to every house. Trouble is, public varies from sensible, well-informed individuals who can make a contribution, through NIMBYs, to out-and-out paranoids.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* Generally, the public should be kept as far away as possible, outside the outer cordon.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Depends on the nature of the risk. Whatever is appropriate. It is a site-specific issue and should be part of the planning/awareness process. Information could range from precautionary warnings to large-scale evacuations. Information can also be used for re-assurance, e.g. factory on fire, but don't be alarmed because no hazardous substances.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Radio, police vans. May do a press release (most likely) jointly with other agencies involved as appropriate. On rare occasions, Council Members may need to be made aware.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* If decision is made to go for a Controlled Burn tactic, the potential health effects would be a major factor. Decision would be suppported by the Council provided based on relevant factors (need guidance!) and rational. Could then re-assure public.
104		Additional notes:

Incident: **Date of Study:**

Source data:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Milton Keynes Council	**Date: 4 Jan 1999**
Individual interviewed: Andrew Barnes, EHO	**Interviewed by: J Pullen**
	Interview mode: Telephone

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* Called-out at the same time as the emergency services if there is any major incident or fire (involving spills, chemicals or asbestos). Environmental Health Division available 24-h for emergencies. Minor incidents, or major incident plan.
2	All	*To what extent are you personally involved in fire incidents?* Gives technical advice on site or at police HQ, or co-ordinating officer from central location. Management-technical role.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* As an organisation, does not have one.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire?* *(N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* N/A
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* N/A
6	FS	*How often are procedures reviewed?* N/A
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* N/A
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Primarily the Fire Service to decide whether Controlled Burn or not. In practice, may (or may not) ask for advice of other organisations. Very dependent on circumstances, e.g. personal safety.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* No problems to date. 2 or 3 incidents so far where Controlled Burn would be appropriate.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ?* *Who makes the decision as to whether a controlled water is at risk?* Yes, does form part of your understanding/ decision-making but usually bow to EA on water, and ask EA to advise LA on what's going on. The LA usually left to deal with long-term effects after Fire Service and EA have departed.

11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* Yes
12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* Risk to life (operational staff or public health) the overriding factor. Also, the practicalities of being able to put the fire out. Example was Keymast Chemicals incident: 30 m3 heaps of smouldering chemicals kept flaring up. Manufactures polymers/plasticisers. 1 fatality. Building destroyed. Soil contamination (approx 9 g Pb per kg).
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* Not initially. Owed approx £20k from Keymast fire. The Council claims off insurers afterwards, but just gets the job done at first. *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?*
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* N/A
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last* say *3 years?)* Yes, enough guidance, but very generic. However recognises that can't have guidance tailor-made to suit every situation. Agencies are aware of it.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* At office level, very good. For specific problems, pretty good. At general management and communication level, liaison is very poor (but recognises this is two-way).
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* Yes. Have own system. For fire/spillage involving risk to environment or public health, the Environmental Protection Team is the first port of call during the daytime, and an EHO is on standby outside normal working hours. They then cascade the information down to EA and other agencies.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* Could emphasise that the LA must be kept up-to-date at all times during an incident.
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* The latter should not change (residual duty of care). The parties that should be informed are: EA, LA, water company, police & health authority.

20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* So far as practicable (bear in mind that the 2 incidents in this area had Controlled Burn decisions based on practicalities). Okay if site has a clear black and white plan saying yes or no to Controlled Burn being BPEO.
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* Has the decision been made by the proper person? Is it the right decision? Is it appropriate practically? The decision needs to be transparent showing reasons.
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* **Very** significant. Council has been and is preparing policies on chemicals and asbestos cement fires (approx 1 fire per month).
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* Significant. Effects from air pollution, run-off, fall-out; then later clean-up problems; then left with longer-term contamination problems.
25	All	*Does your organisation presently have a policy on controlled burn?* Not on Controlled Burn specifically, but on what to do in event of fire (Chief Fire Officer in command, with EHO to provide advice).
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* Yes
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* Generic, so should fit okay.
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* As a LA, we are looking for information from the owners on what's in the building, looking for insurers to pay up for LA costs, and looking for support from other agencies.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* Yes, discussion after each incident (have about 4-5 per year). All have a good idea of what to do and what to expect from each other. Regular meetings with working groups.
30	All	*Do you feel your present level of involvement on this issue is adequate?* At a local level, yes. (Secretary of Thames Valley Environmental Protection Group, so have some higher-level input too.)
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes, very good awareness.

32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* N/A
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Regular meetings, e.g. 2 per year, with Fire Service, EA, etc. Has run specialised courses for fire officers on what LA does. LA, Fire Services and EA all participate.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* The EA should be more locally accountable and should be more aware of the wider incidents than water pollution and be prepared to listen to those who have that knowledge. There are practical and resource problems and financial implications on clean up. Have good relationship with EA waste licensing to accept waste but often difficult to get an authorised carrier to take way contaminated waste from fire.
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* Yes (leaves it to EA provided does not clash with public health).
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* Water is covered okay. There is expectation of air pollution from a fire. Land contamination not covered adequately. Nuisance legislation the only thing covering it at present.
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* Can't comment on this.
38	All	*Are there specific fire incidents that illustrate the benefits or disbenifits of current practice? (N.B. Get details)* Disbenefits: waste-disposal resource problem and cost problem; the Fire Services` need to charge if not an emergency - very significant sums. Benefits: problem solving maintained at a local level by people who are aware of socio-political issues.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Nothing formal, but Andrew Barnes keeps an electronic file of incidents and follow up.
41	FS	*What is the number of all fires in the UK/ your Region?* Approximately 4-5 fire incidents per year involving chemicals.
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving ≥4 pumps with ≥2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* N/A

43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Can't answer
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* N/A
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* Can't answer
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* Can't answer
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* 1991: Plastics recycling plant (proper controlled burn) 1996: Building partly constructed of asbestos sheet left to burn, sheet shattered. (would be left to burn anyway. 1997: Plastics manufacturer (proper controlled burn) 1999: Building partly constructed of asbestos sheet left to burn, sheet shattered. (would be left to burn anyway. Plus other smaller incidents.
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* N/A
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* As early as possible
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Okay if it can make it before the incident, but often necessary to make during the incident dependent on circumstances. Secondary fires may need to be dealt with after the main incident.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* Don't know.
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* N/A.

54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* Hasn't come across any of these.
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* Hasn't come across any of these.
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* N/A
57	All	*In your opinion, who should be involved in making the emergency plan?* Site specific - but should include the relevant enforcement authority (LA or HSE), EA, Fire Service and LA (including Emergency Planning Officer).
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* As above
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* As above. To all those who would be involved if there was an incident at that site.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)* As above. To all those who would be involved if there was an incident at that site.
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* No response given.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Ideal situation would be for Fire Service to be aware of all sites within the Borough where there could be a significant risk if a fire occurred, e.g. Part A processes, warehouses, lots of sites with smaller quantities of chemicals but not covered by other regulations. The local Fire Service in this area wants to extend its knowledge to what's inside the premises.
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* Needs to include both materials hazardous in their own right, and materials hazardous only if involved in a fire, e.g. tyre warehouse.

65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* Size of premises is irrelevant (quite small sites could have a significant quantity of substances).
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?* See Q67.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx. 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* Will overlap with these, but should be independent stand-alone guidance.
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view?* *Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Definitely the plastics industry because very unpleasant substances in lots of small units; also chemical manufacturing; chemical bulk storage; and petroleum industry.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* Haven't heard
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* Not aware of any.
71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* Yes, should be.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* Hazard/risk-based approach worked well in food safety and health & safety. However, needs to be good, clear guidance on how risk assessment should be carried out.

73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* Should be some form of screening, but shouldn't result in complete exclusion of a site unless absolutely no significant risk of environmental damage.
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* N/A
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* N/A
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* Very difficult to say. Probably are some implications because some conditions in an authorisation or permit may not reflect what is needed during a fire. May need to contravene some conditions for the sake of public safety. Decision needs to involve Environment Agency.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* See Q79
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* If a controlled burn made a nuisance then would be in contravention of EPA90 nuisance provisions (but probably couldn't do anything about it, practically).
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* Purely whether they are necessary or not. Practical approach: control fire in normal way, but if not possible the use controlled burn. *Are the obligations for your organisation enforcement or contractual?* Enforcement.
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect towards controlled burns? (N.B. Get copies if possible)* EPA90 nuisance procedures HSAW Act and associated legislation Clean Air Act

83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* N/A
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* No details of any prosecutions.
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn? How does this differ from putting the fire out in the normal way?* Controlled burn is more expensive to the Council in terms of liaison and monitoring and inspection, e.g. secondary pollution – have to police site. The Council tries to get the major costs back from the insurers.
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* N/A
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* N/A
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Likely to be more expensive for controlled burn. With regards site studies/inspection/audits, have looked at what it would cost to categorise all plastics factories in the area: £50k-100k.

93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Again, yes. If you allowed controlled burn, you need more control measures - these cost!
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* N/A
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* Yes, public expectation is that a fire should be put out. There is little awareness of what goes on afterwards. Questions would be asked. Should not have an adverse effect if the decision process is robust. Controlled burn is likely to result in much greater public and media interest, which would stretch the LA.
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Can't comment
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* Advertising (notification) for formal authorisation and permitting. Town/parish council should be made aware and consulted.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* Keep them away.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Depends on urgency of getting information across to the public. • Initially: press, TV, radio. • Advice on emergency actions (e.g. shut windows, etc.): loudspeakers, door-knocking, regular radio bulletins.

102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* As per Q101. Should come from incident control, agreed by all agencies. Common press statement.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* People would be more aware of it if left to burn. Personally, AB got calls for one incident asking why/what happening and what were problem/risks. A real increase in risk perception with controlled burn and more likely to attribute ill-health to a controlled-burn incident.
104		Additional notes:

Incident: **Date of Study:**

Source data:

		Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
105	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?* **AB has details of plastics recycling fire and plastics manufacturing fire.**
106	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
107	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
108	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
109	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
110	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
111	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*
112	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
113	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people physically? e.g.injury, mortality, morbidity*
114	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
115	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
116	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*

117	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
118	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
119		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Loss Prevention Council	**Date: 18th February 1999**
Individual interviewed: Dr. J. Hodge	**Interviewed by:**
	Interview mode:

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?*
2	All	*To what extent are you personally involved in fire incidents?* Involved at the design stage and sometimes after the event to look at the problems associated with it. In some cases sites are visited (i.e., Hong Kong Airport) or work from drawings.
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* A Managed Burn.
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire? (N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)*
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)*
6	FS	*How often are procedures reviewed?*
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?*
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis? (N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* Perhaps the Loss Adjuster should have the final decision as he would know the valve of items and building costs. Civil Liability is not covered.
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* Yes, the FO should be the one to take the decisions.
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* Yes. Environmental appraisals being commenced.
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* No.
12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)*

13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* The Fire Service will recover their costs.
14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* LPC have not seen PPG18.
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* Yes but it needs to be promoted.
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* Good.
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* LPC will not be contact during the event. The Loss Adjuster will inform them after the event.
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?*
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* Insurance Companies.
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* Yes.
21		Additional notes: Local Authorities should be included on this checklist. Civil Liability is missing.

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?*
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* General Understanding is - ½ Fire, ½ Spillage
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?*
25	All	*Does your organisation presently have a policy on controlled burn?* Yes.
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* Aware of MoU but have not seen PPG18.
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?*
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* To have some idea of the costs.
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* Yes.
30	All	*Do you feel your present level of involvement on this issue is adequate?* Yes.
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* Yes.
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)*
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* Only have contact on a policy level, not individual cases.
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* LPC only informed after the event. Local issues, i.e., schools, pollution, asthma.
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* Surface water is a problem.
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?*
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* There needs to be a balance.
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* The Allied Colloids Sandoz Fire in Ireland, Food Factories and DIY SuperStores.
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* Database of incidents.
41	FS	*What is the number of all fires in the UK/ your Region?*
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* Controlled burn should be dependent on fire risk, not number of pumps. If the fire is small, it should be extinguished. It should not be left to grow to become a controlled burn.
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* Need to confirm with database.
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?*
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)*
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* Varies from Brigade to Brigade experience.
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?*
48		Additional notes: HAZCHEM Plates – Could a new plate or code be introduced for controlled burns.

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?*
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* If emergency plan has been written, controlled burns should be included.
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* Decision should be made before the incident.
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)*
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?*
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?*
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?*
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?*
57	All	*In your opinion, who should be involved in making the emergency plan?* The site should be responsible with some involvement from the Insurers.
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* The Client.
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* Insurers need to know of its existence.
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)*
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* Decision is probably taken by Fire Brigade, may be part of the IID assessment.
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* Sites as part of the 11D Form from the Fire Brigade, IPPC sites, warehouses..
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* All substances should be included. Trades to include – Contract warehousing.
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* See CEA fire protection of stores document, Section 1.1.
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* Yes.
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* All sites are covered by HSAW • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* Yes. • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* COMAH & CIMAH sites would already have looked at emergency planning.
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view? Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* Storage is the issue, not necessarily the industry. Concerned with DIY Superstores but not so much for Garden Centres, unless storing large quantities of chemicals.
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?*
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)*

71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* Yes.
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?*
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* LPC have not seen PPG18, please also see Joint Pollution Working Group Report.
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?*
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).*
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* COMAH will improve things. IPPC is concerned with continuous emissions and so does not cover fires.
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* The Fire Law is being reviewed, opportunity for environmental issues.
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?*
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* *Are the obligations for your organisation enforcement or contractual?*
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns? (N.B. Get copies if possible)* Manual of Firemanship – training manual for fire fighting.
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* This question should be broadened to be more widely considered.
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?*
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?*
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* *Does the owner understand what he has to insure?* Currently there is no reduction for having an environmental management system. Would the EML be reduced?
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* Need to look at guidelines for site clean-up costs.
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?*
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* As requirements for COMAH, sites to keep track of costs.
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* If not planned, could lead to litigation. Need to review case studies.
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*

96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* Yes. Companies must cover themselves.
98		Additional notes: On the spot decisions are to be avoided.

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* Local Authorities, Town & Country Planning Stage. If CIMAH/COMAH, public will be involved anyway.
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* General public should be kept away at time of incident.
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* Media, local press should report while incident is happending.
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* Yes, adequate.
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* Need to consider the local community. Controlled burn could result in many losing their jobs. Public should be made aware of the reasons behind a controlled burn.
104		Additional notes:

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Via Chemical Industries Association	**Date: February 1999**
Individual interviewed: Dr. Philip Chown	**Interviewed by:**
	Interview mode:

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* **Site Operator**
2	All	*To what extent are you personally involved in fire incidents?* **Very limited, relates to environmental advice.**
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* **N/A.**
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire? (N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)* **N/A.**
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place? (N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)* **N/A.**
6	FS	*How often are procedures reviewed?* **N/A.**
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?* **N/A.**
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis? (N.B. The draft MoU now covers this - what has happened over the last say 3 years?)* **N/A.**
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* **Generally, advice from operator usually well received.**
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?* **N/A.**
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* **Not always clear re: water. Not often a minor issue for many of our sites.**
12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* **Risk to life biggest issue. Trade off GHG emission vs. water risk. Is E&P able to manage flow**
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* **Not in our experience.**

14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?* **N/A.**
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* **Guidance not good for large sites. Restrictions onerous for small ones.**
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* **Generally good although regional/area variation.**
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?* **N/A.**
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* **No, aimed at spills. Burns not really considered**
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* **All involved.**
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* **Yes**
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* **Protection of life, GHG emissions, cost.**
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?* **N/A.**
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?* **N/A.**
25	All	*Does your organisation presently have a policy on controlled burn?* **No.**
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* **Yes.**
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?* **Not very practical in many cases.**
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* **To be involved in decisions.**
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* **No.**
30	All	*Do you feel your present level of involvement on this issue is adequate?* **No.**
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* **No.**
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)* **N/A.**
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* **Frequency Meetings.**
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* **Can be significant, water impact. Local atmosphere – other air not clear.**
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* **Yes.**
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* **No.**
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* **No.**
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)*
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?* **N/A.**
41	FS	*What is the number of all fires in the UK/ your Region?* **N/A.**
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)* **N/A.**
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?* **N/A.**
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?* **N/A.**
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)* **N/A.**
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?* **N/A.**
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?* **N/A.**
48		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* **Risk Assessment.**
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?*
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* **Petrochemicals, fuels.**
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* **Larger quantities probably.**
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* **Water Pollution – Yes.** **Air Pollution – Yes.** **Waste Movement – No.**
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* ✔ • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* ✔ • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* ✔ • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* ✔ • *Any other classification of sites? e.g. B1 industrial use?* ✔ • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* **Possible**
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view? Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc*
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?* **N/A.**
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)*

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?* **N/A.**
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).* **N/A.**
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* **Needs to be integral with COMAH & IPPC.**
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.* **N/A.**
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?* **N/A.**
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* **Positive in right circumstances.** *Are the obligations for your organisation enforcement or contractual?*
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns? (N.B. Get copies if possible)* **N/A.**
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?* **N/A.**
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?* **N/A.**
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?* **Vary site/incident specific.**
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* **Not often.** *Does the owner understand what he has to insure?* **Not always.**
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* **Generally.**
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Probably not.**
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Probably not.**
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **N/A.**
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **N/A.**
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Probably not.**
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **N/A.**

97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?* **N/A.**
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* **Open dialogue.**
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* **Minimised but kept informed.**
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* **Quick and accurate advice** **Door to Door/Media.**
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* **Never enough fast enough!**
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Probably little difference.**
104		Additional notes:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people, both physically and emotionally? e.g. adverse publicity, hostility from local community.*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact? Attitude of Operator and insurers?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*

		Additional notes: **Unable to answer this section.**

INFORMATION GATHERING CHECKLIST

Organisation interviewed: Via Chemical Industries Association	**Date: 15/2/99**
Individual interviewed: K. Dixon-Jackson	**Interviewed by:**
	Interview mode:

Approaches used in controlled burns A working definition of controlled burn for this project is "*a restricted or controlled use of water/ foam on fires where chemical or contaminated run-off may be a risk to the environment*".		
1	All	*What is the involvement/ role of your organisation in fire incidents/ controlled burn?* **Premises at risk.**
2	All	*To what extent are you personally involved in fire incidents?* **Adviser.**
3	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the definition of a controlled burn as perceived by your organisation?* .
4	FS	*What is your (Fire Brigade's) understanding of the procedure to be adopted as regards informing the EA/ local authority of a potential pollution problem resulting from a fire? (N.B. The draft MoU covers informing the EA and for what type of incident. But is it suitable criterion for controlled burn?)*
5	FS	*Does your Brigade have controlled-burn policies/ procedures in place?* *(N.B. The draft MoU implies this will be required. At least some Fire Brigades reported to have existing guidance on Controlled Burn for agrochemicals sites.)*
6	FS	*How often are procedures reviewed?*
7	FS	*For those Brigades with controlled-burn policies/ procedures in place, what are their experiences of it?*
8	FS, EA, SEPA, HDNI, EHOs	*Who makes the final decision on controlled-burn at the incident? On what basis?* *(N.B. The draft MoU now covers this - what has happened over the last say 3 years?)*
9	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Does the present situation work well, where the final decision on burn/controlled burn lies with the fire officer by means of the memorandum of understanding with the Agency?* **Never been tested in my organisation.**
10	FS, EA, SEPA, HDNI, EHOs	*Does a potential threat to groundwater/land/air form part of your understanding/ decision-making ? Who makes the decision as to whether a controlled water is at risk?*
11	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you think this decision-making process is correct and operates satisfactorily? In particular, are you satisfied that the right decision-making procedures are in place to decide whether water is under threat?* **Unaware of process details.**
12	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What, in your view, are the overriding factors or situations that would make controlled burn a particularly appropriate or inappropriate option? (e.g. a risk to life - covered by the draft MoU)* **Risk to life, risk to water supply.**
13	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What about the financial impact (on Operator, insurers, fire brigades, the Agency, etc) - does this form part of your current decision-making process?* **Minor Impact.** *What about cost to the Fire Service? Does the decision depend in part on how quickly the fire-fighting team are needed back from the incident? Does this give rise to any conflict with the wishes of the Operator/ owner or insurer?* **Should not be an issue.**

14	EA, FS, SEPA, HDNI	*The draft PPG18 contains recommendation on liquid-spillage containment systems. Should this be a factor in deciding controlled burn? i.e. if the containment system is big enough capacity for the firewater, then surely don't need to worry about controlled burn! Do the FS have this information before they attend site for a fire incident?*
15	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is there sufficient existing guidance on to help organisations to make these decisions (N.B. The draft MoU and revised draft PPG 18 will give much help, but what has happened over the last say 3 years?)* **No.**
16	FS, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is day-to-day liaison with the Environment Agencies like?* **Good.**
17	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC	*What procedures are in place for your organisation (EA/ SEPA/ HDNI/ EHOs) to be contacted in the event of a fire occurring? Do these follow the general principles of the draft MoU and draft PPG18 guidance?*
18	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the guidance given in draft MoU on types of occasion when EA should be informed of an incident relevant/ sufficient/ appropriate for specifically controlled burn? (Many examples are for spillage). Are there any improvements that could be made?* **Unseen MOU**
19	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*To which organisations/ parties should the final controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advice during incidents)* **All.**
20	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should controlled burn be an issue covered as part of general fire-safety planning?* **Yes.**
21		Additional notes:

Concerns, views and attitudes of interested parties relating to controlled burns		
22	All	*What are your organisation's main concerns, views and attitudes on controlled burn?* **To protect people and water supply.**
23	EA/SEPA/HDNI/EHOs	*Compared to other air/water/land pollution issues facing you as a Regulator, how significant an issue is that of pollution from fires?*
24	EA/SEPA/HDNI/EHOs	*How do you rate the secondary effects of fires (i.e. water/land/air pollution effects and protection of public water supplies) in comparison with the day-to-day public-health issues which you deal with?*
25	All	*Does your organisation presently have a policy on controlled burn?* **No – our focus is on fire prevention.**
26	Not EA or FS	*Are you aware of the existence of the draft MoU and draft revised PPG18 guidance?* **No.**
27	Not EA or FS	*If so, how will the general principles of these fit with your organisation's role/ current policy/ practice? Do you have any concerns/ views about this?*
28	All	*What are the requirements of the site owner, insurance company and other organisations involved?* **Protect people and the water supply.**
29	Not ES or FS	*Does your organisation have an active dialogue with the EA and the fire service on this issue?* **Yes.**
30	All	*Do you feel your present level of involvement on this issue is adequate?* **Yes.**
31	All	*Do you think that your organisation has been given a sufficient appreciation of the water/land/air pollution issue?* **Yes.**
32	FS	*Do you (Fire Service) think that Fire Officers have sufficient awareness on the issue of water/air/ground pollution? Would more training help? (N.B. The draft MoU says that it and its concepts should be brought to the attention of all relevant FS and EA staff by training programmes. Is this being done?)*
33	Not FS	*How much regular contact do you have with the emergency services to ensure that the appropriate procedures are in place?* **At least annually.**
34	All	*What is your operational experience of the impact of fires on water/land/air (/other impacts e.g. financial, legal, emotional) in your area? What does this experience tell you? Does anything need to change?* **Going in right direction.**
35	All	*Do you think sufficient attention is paid to the threat of groundwater as a result of fires?* **No.**
36	All	*On the environmental impact specifically, do you think that existing (or future draft) guidance adequately balances risk to water, air and land?* **Don't know.**
37	All	*Do you think that existing (or future draft) guidance adequately balances risk to life/ property/ finance with risk to the environment?* **Don't know.**
38	All	*Are there specific fire incidents which illustrate the benefits or disbenifits of current practice? (N.B. Get details)* **Don't know.**
39		Additional notes:

Quantification of the scale of controlled burns in the UK		
40	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What record-keeping procedures does your organisation have in place for fire incidents and controlled burn?*
41	FS	*What is the number of all fires in the UK/ your Region?*
42	EA, FS, SEPA, HDNI, LPC	*What size of incident would activate a controlled burn decision, e.g. 10-pump fire? 20-pump fire? (N.B. The draft MoU suggests the EA is informed of incidents - not necessarily controlled burn - involving □4 pumps with □2 jets in use. Also needs to be informed of any incident involving identified risk sites and chemicals - this may be <4 pumps.)*
43	EA, FS, SEPA, HDNI, HSE, LPC, EHOs	*What is the number of all fires above this threshold in the UK/ your Region? What proportion involves hazardous materials?*
44	EA, FS, SEPA, HDNI, LPC, BASIS	*The draft MoU states that Fire Service should inform EA of any incident where water pollution has or could occur. Could you give me a list of these, or say where the record are kept?*
45	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*How prevalent is application of controlled burn at the moment? (both in the Interviewee's region and nationally if has knowledge of this)*
46	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Does it vary regionally? If so, how?*
47	EA, FS, SEPA, HDNI, LPC, EHOs BASIS	*Please give brief details of incidents known to you where controlled burn was carried out, or where controlled burn was considered but not selected as being the appropriate course of action. Where can further details on these incidents be obtained?*
48		Additional notes:

Nature of emergency plans used in controlled burns		
49	EA, FS, SEPA, HDNI, HSE, Operators	*Are you aware what is being done at the moment? Are you following the general principles of the draft MoU and draft PPG18 guidance?* **No, No.**
50	All	*At what stage does your organisation think emergency plans to include CONTROLLED BURN should be developed?* **Pre-planned.**
51	All	*At what stage should the decision on controlled burn be made: before or during incident? (N.B. the decision is complex, making it promptly during an incident is not ideal where there is pressure for quick action)* **Before/monitored during.**
52	All	*Do any sites presently have Emergency-Response Plans, which would include the response to a fire and whether Controlled Burn would be appropriate? (N.B. the Loss Prevention Council has some guidance on risk assessment for warehouses; Some fire brigades have risk plans for certain sites - what do these plans cover?)* **No.**
53	EA, FS, SEPA, HDNI, HSE, BASIS, Operators	*The draft MoU says that the EA and FS will jointly ensure contingency plans for fire-fighting at high-risk sites, including provision to minimise contamination of controlled waters. Is this happening?* **Don't know.**
54	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*Draft PPG18 says that although Emergency Plans are required by COMAH and other schemes and CoPs, for sites not covered by the EA still advises that an Emergency Plan is produced. Copies of the Emergency Plan should be supplied to the emergency services, EA and other relevant authorities. How many have done so? The Emergency Plan should include fire-fighting strategy where appropriate to prevent pollution by run-off. How many contain this?* **All, all sites.**
55	EA, FS, SEPA, HDNI, HSE, BASIS, EHOs, Operators	*The draft MoU, says Emergency plans should be drawn-up as quickly as possible by contact between EA, FS, Site Operators and other interested parties. Have they been?* **On going.**
56	EA, FS	*How often have the EA and FS been consulted to help develop such Emergency Plans?* **On CIMAH submission.**
57	All	*In your opinion, who should be involved in making the emergency plan?* **Ea. FS, Operator.**
58	All	*What organisations (e.g. the Fire Service and other interested organisations) should give assistance to develop the emergency plan?* **EA, FS.**
59	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the emergency plan be communicated?* **All.**
60	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, Operators	*To whom should the controlled-burn decision at the incident be communicated? (the Agency presently relies on local authorities give public-health advise during incidents)*
61		Additional notes:

Sites to be covered by controlled burn guidance		
62	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How are at-risk sites currently identified for controlled burn consideration? (N.B. Draft revised PPG18 offers guidance on this and draft MoU mentions that individual FSs should draw-up with EA a list of at-risk sites, including Part A processes, and Emergency Plans.)* **None.**
63	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of sites does your organisation think should be covered by future controlled-burn guidance?* **Bunded Tank Farms.**
64	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the type of substances that should be covered by controlled-burn guidance? (N.B. must obviously include hazardous materials or not worth worrying about! But need to define these.)* **Those that pose a threat to water supply due to position and effect on water.**
65	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is your organisation's view on the size/quantity threshold that should be applied to sites/substances covered by controlled-burn guidance?* **Depends on risk assessment.** *The Draft revised PPG18 offers guidance on threshold quantities for spillages of different substances, type of substances also listed in Annex 5 of draft MoU. Are these relevant/ sufficient/ appropriate for controlled-burn specifically?* **Should relate to installation bunding, sprinklers etc.**
66	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view should any guidance cover:* • *Potential incidents within the remit of Agency (i.e. water-pollution incidents from any source, air pollution from part A EPA processes, and regulated waste movement and disposal and special contaminated sites)?;* **Yes.**
67	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*you think any of the following should be given special attention:* • *Sites covered under the HSAW Act? (e.g. the CIMAH Regs 1984 which already requires the company to submit a safety report including emergency procedures to HSE, and the Planning (Hazardous Substances) Act 1992 which covers the storage of certain hazardous substances above a "controlled quantity");* • *Sites covered by the forthcoming COMAH regulations? (approx 400 top-tier sites rigidly controlled; also lower-tier sites)* • *Sites covered by the forthcoming IPPC regulations? (will require an emergency plan)* • *Sites accredited to ISO14001 or EMAS? (require an emergency plan)* • *Any other classification of sites? e.g. B1 industrial use?* • *Do you see any potential link-up with the forthcoming Agency Works Notices powers?* **CIMAH & COMAH, others by assessment.**
68	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In your view, which industries are most in need of guidance on controlled burn?(e.g. metal finishing, timber treatment). Are there recorded incidents to support this view? Any non-industrial sites of special concern? e.g. DIY superstores and garden centres with herbicides, etc* **Agrochemical, Pharmaceutical and Veterinary Warehouses.**
69	EA, FS, SEPA, HDNI, BASIS,	*The draft MoU, Annexe 4 Note 3, says it is planned in the future to produce a list of sites of particular concern to the EA, e.g. timber-treatment sites. These lists would be supplied to the FS. Have they been? If not, when is this expected?*
70	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do any of these industry sectors have their codes of practice with emergency plans that cover controlled burn or fires? (e.g., wool-processing industry, metal-finishing industry)* **Some companies do.**

71	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Should mobile potential pollution sources (e.g. road tankers) be covered by guidance? (The view of the Agency's National Emergency Management Group is that is should.) Should high-risk receptor areas (e.g. sections of highway) be identified as part of this strategy? How would emergency-plan information be passed to the EA and FSs involved in the event of a fire incident with a mobile source?* **Yes, yes, Don't Know, (Phone).**
72	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a risk-assessment based procedure for determining the potential for pollution and establish which sites need to draw-up emergency plans. Is this likely to be successful (based on similar, previous approaches e.g. COSHH) and is it consistent with existing approaches (e.g. OPRA)? Will it be suitable, specifically, for controlled burn or is some simpler (prescriptive?) approach/ criteria more appropriate?* **Most suitable.**
73	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Draft revised PPG 18 recommends a checklist for assessing the environmental sensitivity of an individual site. Could this be useful as a screening tool to exclude some sites in some areas?* **No, an assessment is needed.**
74		Additional notes:

Legal basis of controlled burns		
75	EA, FS, SEPA, HDNI, HSE	*How would controlled-burn decisions be reconciled with the Fire Protection Act 1948, the Water Resources Act 1991 and the Environmental Protection Act 1990?*
76	EA, FS, SEPA, HDNI, HSE	*What are the implications, especially conflicts and applications of any controlled burn guidance, for the Fire Protection Act and EPA? (e.g. duty for protection of life and property under Fire Protection Act, but protection of property is not a defence under EPA if pollution caused).*
77	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the implications (especially conflicts and applications) for forthcoming Acts/ Regulations, especially COMAH and IPPC?* **Not much.**
78	EA, FS, SEPA, HDNI, HSE	*Is there any other existing or forthcoming legislation where there are implications, conflicts and applications of any controlled burn guidance.*
79	EA, FS, SEPA, HDNI, HSE	*Are there any Acts/ Regulations that controlled-burn policy could be implemented through?*
80		Additional notes:

Legal obligations, policies and attitudes of organisations concerned with controlled burns		
81	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the present legal obligations, policies and attitudes of your organisation towards controlled burns?* **Use if required.** *Are the obligations for your organisation enforcement or contractual?* **Enforcement.**
82	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Under what Acts, Regulations, Guidance, ACoPs, terms & conditions and professional guidance does your organisation operate with respect to towards controlled burns? (N.B. Get copies if possible)* **Internal Regulation.**
83	FS	*What is the legal liability of the Fire Service when allowing a building to burn?*
84		Additional notes:

Number and nature of prosecutions involving controlled burns		
85	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Can you provide details on the number and nature of prosecutions involving controlled burns or the decision to put out?*
86		Additional notes:

Costs of controlled burns to the Agency, industry fire services, insurers and others (If the interviewee cannot give a quantitative value of costs, it would be helpful if he/ she could estimate whether the cost-impact would be positive or negative and whether it would be insignificant, moderate or major)		
87	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What are the general financial consequences to your organisation of allowing fires to burn?* *How does this differ from putting the fire out in the normal way?* **Little difference due to smoke and water damage.**
88	LPC, Operators	*Do the insurers` (in general, as well as the specialists) understand what they are insuring with regards to this issue? or do they just charge a premium + 10% to cover such eventualities? Does the owner get any reduction in premium for having an Environmental Management System or an Emergency Plan?* **Yes, No.** *Does the owner understand what he has to insure?* **Yes.**
89	LPC, Operators	*Are current insurance policies appropriate for covering controlled burn? What about contingent costs? Do environmental liability policies cover this issue? (N.B. There are some specialists such as Factory & Mutual who may require a risk assessment before they insure).* **Yes, Covered, Yes.**
90	LPC, Operators	*What is the financial impact of conventional upfront costs for Operators/ owners/ insurers (e.g. capital equipment, materials, supplies, structures, salvage value) of a controlled burn decision?* **High.** *Would this differ for controlled burn compared to putting the fire out in the normal way?* **Not by much.**
91	LPC, Operators	*What is the financial impact of partially-hidden environmental costs for Operators/ owners (e.g. site studies, planning, reporting, records keeping, permitting, training, audits) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Same, No.**
92	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of partially-hidden environmental costs for the Fire Service and Regulators (e.g. site studies, inspections, audits, permitting, reporting, training, guidance) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
93	LPC, Operators	*What is the financial impact of contingent costs for Operators/ owners (e.g. legal expenses, penalties and fines, remediation costs, property damage, personal injury, natural-resource damage, economic-loss damage) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Same, No.**
94	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of contingent costs for the Fire Service and Regulators (e.g. prosecution costs, staff costs at incidents, remediation costs) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*
95	LPC, Operators	*What is the financial impact of image & relationship costs for Operators/ owners (e.g. corporate image, relationship with customers, relationship with investors, relationship with insurers, relationship with staff, relationship with lenders, relationship with host communities, relationship with Regulators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Not Known, Not Known.**
96	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*What is the financial impact of image & relationship costs for Fire Service and Regulators (e.g. corporate image, relationship with public, relationship with staff, relationship with host communities, relationship with owners/Operators) for a controlled burn policy? Would this differ for controlled burn compared to putting the fire out in the normal way?*

97	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS,	*Is there any potential financial impact through legal liability for Fire Service and Regulators if a controlled burn policy is implemented?*
98		Additional notes:

Involvement of the public at locations where controlled burns may occur		
99	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at the emergency planning stage?* **Nil.**
100	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*In the opinion of your organisation, what should the extent of public involvement be at an incident? How will this be managed? (N.B. The EA has recently signed a MoU with the Association of Chief Police Officers to ensure effective co-operation during major incidents where the environment is at risk.)* **Fully informed via local radio, siren.**
101	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What information should the public be given, when and by what medium?* **Full by services and operator via local radio and siren.**
102	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What is the present means of involving/ informing the public? Is this adequate? Can you suggest any improvements?* **Siren, Local Radio.**
103	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What do you think will be the emotional effect on people? e.g. adverse publicity, hostility from local community for a controlled burn incident? Would this differ for controlled burn compared to putting the fire out in the normal way?* **Not Known, No.**
104		Additional notes:

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What type of site/ process/ industry was involved?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What substances were involved and what quantities?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the chemical transformations and pathways to air, land and water?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the effect on people, both physically and emotionally? e.g. adverse publicity, hostility from local community.*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the financial impact? Attitude of Operator and insurers?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What were the legal implications?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
	EA, FS, SEPA, HDNI, HSE, EHOs, BASIS, LPC, Operators	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*

		Additional notes:

PART III CASE STUDIES OF SELECTED INCIDENTS

Incident: **Hemswell Airfield, West Lindsey, Lincs, 28 May 1998**
Source data: **Phil Young, Environment Agency, Lincoln**
John Whaler, Divisional Commander, Lincolnshire Fire Brigade
Wayne Lambert, Principal EHO, West Lindsey DC

Date of Study:
24 September 1999

	Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?* Warehouse fire at Hemswell Airfield, Hemswell Cliff, West Lindsey, Lincolnshire.
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Warehouse fire involving animal feed. Arson was suspected: tyres had been stacked up against the rear of the warehouse and set on fire by a lit hosepipe attached to a propane gas bottle and acting as a flame thrower. Lincs. Fire Service provided approx. 12 pumps on first day then down to 1-2 after decision for controlled burn.
3	*What type of site/ process/ industry was involved?* Storage.
4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* The warehouse contained 10,000 tonnes of palletised 20 kg sacks of dried molassed sugar beet shreds, an animal feed (although the operator was not actually insured for this). Each sack contained 21% total sugar (as sucrose and 12% fibre.

5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* The Fire Brigade reported the fire to the Agency at 1530h on 28 May 1998. On the first day, three Agency officers attended the incident site at 1600h. Fire Brigade (Lincolnshire and also Humberside and Nottinghamshire), Police, and Ambulance Services were all on site. The Fire Brigade had found it difficult to reach the heart of the fire within the warehouse because of the huge amount of sugar beet being stored within it. This difficulty was compounded by the fire being at the rear of the premises and the roller-shutter doors were at the front only, with 10,000 tonnes of sugar pulp in between. On arrival at the incident site, Agency staff immediately made the Fire Brigade aware of the vulnerability of the underlying aquifer and the extreme importance that all contaminated firewater was contained. Contaminated firewater run off from the fire was therefore contained within the concrete bunded building. West Lindsey DC provided sandbags to help contain run-off within the confines of the warehouse. As a precautionary measure, Agency staff visited nearby farms listed as having groundwater abstraction boreholes to inform them of the incident. There was very good liaison and co-operation between the Agency, Fire Brigade and police (who controlled traffic and kept people away). The EHO from West Lindsey DC came down on the first with a watching brief, as he was concerned with the smoke. On the second day (29 May), Agency officers attended the site at 1100h. The fire was still very active. Access to the fire by the Fire Brigade was still difficult due to intense heat and smoke. Firewater run-off was still minimal (contained within the warehouse). The manufacturer of the sugar beet (British Sugar Co.) was on site to advise, and arranged to have all contaminated firewater runoff tankered away to its effluent treatment plant at Bardney. At 1400h the Fire Brigade and Agency made the decision to cease spraying the main body of the fire with water and allow it to burn out. The Agency decided this was the best environmental option. The exterior of the warehouse was sprayed with water to keep the building cool and prevent collapse. The local EHOs were happy for the controlled burn to continue as smoke from the fire was not affecting any other party in close proximity to the site. On the third and fourth days (30-31 May), the Fire Brigade and Agency staff were in attendance over the weekend. The fire was still being allowed to burn itself out. Under the guidance and approval of the Agency, all contaminated firewater run-off from the warehouse was directed into inflatable bunds that had been strengthened and reinforced with sandbags supplied by West Lindsey DC. All entrances within the warehouse had been sealed off in order to prevent polluted run-off from escaping. The entire collected run-off was again tankered away by British Sugar Co. Operations were scaled down. The Fire Brigade remained on site with a watching brief to control fire. The Fire Brigade left site at 1630h on 2 June. Fire-fighting equipment was cleared. Security and safety of the incident site was passed back to the site owners. A security firm was brought in by the owner to watch the site. The site was last inspected by the Agency on 3 June 1998, although fire was seen to be smouldering on 9 June. All contaminated firewater runoff had been tankered off site and no pollution risks were evident. The Fire Brigade confirmed they would call around from time to time.
6	*What were the chemical transformations and pathways to air, land and water?* Lots of black smoke emitted: not clear what the combustion products to air were. Main environmental hazard thought to be the liquor in the run-off from the sugar-beet. No analysis carried out. The site is on a highly permeable major aquifer (Soil Class H1 – soils that readily transmit liquid discharges because they are either shallow, or susceptible to rapid flow directly to rock, gravel or groundwater).

7	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* **Air Pollution** The site of the fire was on a remote edge of the former airfield and the smoke was blown away from residential areas. **Surface Water Pollution** The impact was minimal: the contaminated firewater run-off was contained within the building, which had a concrete floor, and tankered away for disposal. **Groundwater Pollution** The impact was minimal: the contaminated firewater run-off was contained within the building, which had a concrete floor, and tankered away for disposal. **Land Contamination** The impact was minimal: the contaminated firewater run-off was contained within the building, which had a concrete floor, and tankered away for disposal.
8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Because the transport of pollutants to water and land was physically prevented, the assessment of minimal impact is fairly robust. In the case of air pollution, there were no (human) receptors in the area where the plume grounded so their were no (human health) effects and no known after effects, i.e. minimal impact. No sampling and analysis carried out.
9	*What was the effect on people physically? e.g. injury, mortality, morbidity* No physical effects or injury to operational staff at the incident (Agency, Fire Brigade, police) or in the surrounding community.
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* The incident attracted significant public and media interest (Lincolnshire Echo, Lincs FM Radio, BBC Radio Lincs, and local TV news. No significant positive or negative slant leading to image problems.
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* Impact on the Operator: a newish building was destroyed (this is now being rebuilt). No knowledge of the identity of the insurers. Lincolnshire Echo says the sugar beet was worth "hundreds of thousands of pounds". British Sugar paid for the tankering and treatment of waste. There were no fines or third-party claims. No knowledge of any adverse impact on local business through closures or loss of trade. Costs to the Fire Service reported to be £17,500 (more than 50 firefighters attended). Costs to the Environment Agency: staff costs about 16 man-hours, recouped by back-charging the warehouse owner; sandbags from West Lindsey DC £310.
12	*What were the legal implications?* No legal action was taken because the fire was started by arson .
13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* Yes, definitely, for health & safety as well as environmental reasons. There are lots of boreholes in the vicinity (on farms), so if this environmental option had not been chosen the environmental impact could have been considerable.
14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* In this case there was no conflict between health & safety and environmental protection; they went hand in hand. The controlled burn option was taken on primarily health & safety grounds after 24 hours. The Agency was happy with this: they would have considered controlled burn anyway if the Fire Brigade hadn't been able to cope with tankering away the volume of run off. The Operator was not present on site when the controlled-burn decision was made and had no part in it.

15	*Additional notes:* Lincs Fire Brigade: Mike Sinath 01476-565441

Incident: **D&L Plastics fire, Thetford, 11-13 October 1991** **Date of Study:**
Source data: **Ian Hill, Environment Agency, Huntingdon.** **8 April 1999**
Don John, Beckland District Council.
Trevor Bacon, Director of Fire Safety, Norfolk Fire Services.

	Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?* Incident at D&L Plastics, Thetford, was the best example in this region. Given as a case study by the NRA/Agency to Fire Service staff during environmental awareness training courses. Also used by the Home Office as a case study at the Emergency planning Training College, Easingwold.
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Plastics fire. Norfolk Fire Service provided 2 pumps initially. However, incomplete water mains for fire (1.5 miles from River Thet). The fire spread to a couple of bales of plastic and by the time water had been collected, 13 pumps were needed. The fire continued for 3 days, with 50 fire appliances at one stage. The RAF and USAF provided some water carriers (big tenders).
3	*What type of site/ process/ industry was involved?* Plastics recovery site (2 acres) at Caxton Way industrial Estate at the back of Thetford. Took plastic from all sources (e.g. off-cuts from uPVC windows and doors, plastic bottles, artificial limbs) and ground them before recycling. A licensed waste regulation site (Mark Reeve at Norwich Agency office may have more information).
4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* The plastic on the surface melted and then solidified as water was applied, but the bales carried on burning inside. Very high temperatures reached. Very little monitoring took place during the incident. The one attempt to measure emissions involved the use of simple Draeger-type gas-detection tubes for HCl. At distances >100 m from the seat of the fire, HCl was barely registering on the scale.
5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* The NRA was informed within 40 minutes of the start of the fire, but the NRA Control Room made an error in passing on communications (message taker thought it was notification of an event that had occurred and did not action it). Procedures were not followed and the NRA operational staff at the district were not informed. The relevant NRA officers found out about the incident from TV coverage. The local authority (Breckland District Council) were notified by telephone late on the first day. Environmental Health Officers were present throughout the incident supporting actions requested by the police. In addition, the Director of Public Health attended and on the second day scientists from the National Poisons Unit (London) joined. The Council's Emergency Planning Officer was also available to implement the District Emergency Plan if required. Norfolk Fire Surface tried to extinguish the fire as effectively as they were able, but was hampered by insufficient water supplies. Nonetheless, 1.9 million gallons of water (and foam) were applied (up to 5000 litres per second in the first 24 hours, 1000 l/s for the next 24 h, and small quantities in the last 24 h). The RAF and USAF provided some water tenders. The USAF did not make themselves very popular because the caused concern (to the police) by their use of sirens, etc., and decided to act autonomously rather than under the direction of the police. On the second day, the site had to be abandoned for the day, because of low fog and mist: acid precipitation of pH1-2 was being deposited.
6	*What were the chemical transformations and pathways to air, land and water?* Lots of black smoke emitted: not clear what the combustion products to air were, but assumed to be hazardous and EHO (Breckland District Council) closed-down the nearby shopping centre (Sainsburys, Great Mills, etc.) for 2 days as a precaution. Very fissured chalk. Water level 78m down the hillside. A large, deep (7 ft) ditch at rear of site became full of water. A pipe led into a culvert system down into the River Thet at the bottom of the hill, so there was a direct surface water discharge. It was calculated that a good 50% of water sprayed on the flames would have evaporated, but the remainder (0.5-1 million gallons) soaked into the ground. NRA Anglian Region memorandum states that the site of the fire is outside the Zone A of either borehole supply on (their) Aquifer Protection Map. However the capture zones cannot be well defined because of the uncertainties in the hydrogeology, and (they) cannot be confident there is no risk to those supplies.

7 *What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*

Air Pollution

On the second day, the site had to be abandoned for the day, because of low fog and mist: acid precipitation of pH1-2 was being deposited.

Breckland Council collected samples of dust and vegetation from a number of locations up to a mile from the site. The main focus was on gardens and open areas under the path of the plume. A control sample was also taken from an upwind location. Samples were analysed for dioxins. All proved negative.

Surface Water Pollution

The direct surface water discharge into the River Thet from the culvert was well diluted and no significant effects from contamination were noted.

The River Little Ouse downstream of Thetford is regularly monitored biologically and no effect on the river water was found.

Following elevated levels of dioxins found in soils on site, the NRA analysed water samples for dioxins: none found in river water

Flow

So much water was being taken from the river Thet in a low-flow period that the river stopped flowing. This could have had very serious implications downstream, and illustrates the importance of informing the NRA.

Groundwater Pollution

It was feared that highly contaminated water soaking into the ground at D&L would reach the aquifer and become the water being drunk by the residents of Thetford: a major Anglian Water abstraction point, Barnham Cross, and other boreholes were nearby. However, monitoring showed there was no significant impact on these.

Firewater analysis of run-off and puddles on the site were carried out. Largest components (high ug/l to low mg/l level) were toluene and styrene, with lesser concentrations (µg/l levels) of ethyl benzene, xylenes, other alkyl benzenes, naphthalene, 2-methylnaphthalene, 2-methyl naphthalene, benzene butanitrile and heavy oil fraction.

A medical products company (Baxters Healthcare Ltd., manufacturing eyewash, plasma, etc.) were located 500m down the slope at the bottom of the hill (i.e. the direction contaminated water was likely to go) and abstract water for their process from an industrial borehole. 6-Months after the incident, the manager found chlorinated hydrocarbons in the supply were gradually increasing. (This did not have an adverse impact on the company as they purified the water anyway.) Results of Baxter's monitoring (units µg/l) were:

Date	Dec 90	Jul 91	Nov 91	Jun 92	Nov 92
1,1,1-trichlomethane	5	6	<1	9	8
tetrachloromehane	1	1	<1	1	1
trichloroethane	1	1	4	2	1

(Other halogenated organics were analysed for but not detected.)

Boreholes in the area were used to monitor the situation (sampled on a regular basis) and the contaminants gradually disappeared. NRA commenced monitoring for 1,1,1-trichloroethane and trichloroethane in November 1992 and found both these compounds at low µg/l concentrations. Traces of fluorocarbons (3 different isomers of tridecafluorohexane; 2 different isomers of tetrachlorohexafluorobutane; trichloroheptafluorobutane; and hexachlorohexafluoropentane) were also found. The NRA postulated that the possible sources of FCs were:

- breakdown products from burning of waste plastics (PTFE);
- lost refrigerants from the waste-transfer site;
- use of fluorocarbons on site; and/or
- foam used in fighting the fire.

The most likely source was thought to be the fire-fighting foam (Fluoroprotein FP70 manufactured by Angus Fire Fighters)

Chemicals in groundwater were at high µg/l to low mg/l levels.

Following elevated levels of dioxins found in soils on site, the NRA analysis of groundwater samples for dioxins measurements: some found in water courses.

A chemicals company (Stanhope Ltd) supplying chemicals to Rentokill was also located on the hillside: boreholes were drilled and samples taken and was found to be not contributing.

Land Contamination

In May 1992, the NRA was informed of the results of the HSE's investigation (Factory Inspectors: Graham Roberts, John Claxton) into dioxins levels in soil at the site. The study indicated "significantly elevated levels" of dioxins in soil. Following the detection of dioxins on the site surface the HSE closed the site with a Safety Order. The site laid derelict for 4-5 years, then bought by Anti-Waste to extend their waste-handling depot. They removed topsoil (to a certain depth) from the entire site for disposal at a licensed site, then put down a membrane and backfilled with gravel. Now used as a waste-transfer station.

8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Impacts on surface water, ground water and land based on some sampling and analysis. Impact via emissions to air in plume not based on hard data.
9	*What was the effect on people physically? e.g. injury, mortality, morbidity* Some firemen (approx. 70) sent to hospital because of the effects of the fire; about 3 kept in overnight. (Norfolk Fire Service may be able to provide further details.) The local GPs did not report any increases in respiratory disorders in the weeks following the incident.
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* Local community was very displeased about the fire and concerned about the after-effects. Considerable local media coverage, especially on issue of dioxins, and this continued for several months after the fire. This was fueled by academics speculating on the pollution effects, and by scare stories about dioxins and their effects, e.g. "levels in plastics factory site soil were about 125 times the normal levels and about 20 times the safe amount" (in fact this related to surface samples of burnt residue collected by HSE after the fire). Local residents immediately abutting the site, also arranged public meetings to protest about potential re-establishment of the business.
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* Lots of parties wanted to make claims against the Operator, but had to be written-off because the Operator went bust and also had no insurance. A quote to the Council for remediation of topsoil was £100k, covering the stripping of 1 m of surface material and disposal at a site licensed for hazardous waste. The nearest was some considerable distance from Thetford and transport costs were a major component of the estimate. The HSE supplied the schedule of remedial work. However, when Anti-Waste took over the site they did this at their own cost. Costs to the Fire Service were quite considerable: 600 men were deployed over 3 days, and lots of equipment (hoses, etc.) costing about £40-50k was ruined. Costs to the NRA was small (about 1 man-week plus analysis costs) partly because they didn't find out about it until a late stage. The Waste Regulator (contact: Mark Reeve) spent quite a bit of time in liaison, meetings, etc., and this was more (approx. 2 man-weeks). Closure of the nearby shopping centre (Sainsburys, Great Mills, etc.) for 2 days led to considerable loss of trade, but no information is available on the exact cost.
12	*What were the legal implications?* The prime one was trying to close the site down: Norfolk County Council (as the Waste Regulatory Authority) tried but couldn't (they issued an order under Control of Pollution Act 1974: Section 16(5) enables the CC, where waste has been deposited on land without a license, to take certain steps to prevent either pollution to water or danger to public health. However this was overturned on appeal by magistrates at Thetford on the basis that the plastics stored on the site did not come under the definition of waste; and even if the plastics were regarded as waste it was not their deposit which caused the contamination but the intervening fire; this view was upheld on a High Court Appeal). Under Section 25 of the HSAW Act 1974, the HSE has powers to seize and render harmless any article or substance on land which they have the power to enter which is a cause to imminent danger of serious personal injury. The HSE managed to close the site down using a Prohibition Order issued under part 1 of the HSAW Act, on the basis of the risk posed by the dioxins they found. In parallel, Breckland DC issued an Abatement Notice under Part III of the Environmental Protection Act 1974, requiring the owners to secure the site from the public. Section 85 of the Water Resources Act 1991 makes it an offence for a person to cause or knowingly permit any "poisonous noxious or polluting matter" to enter "controlled waters", including groundwaters. Section 161 of the Act enables the NRA to take action to prevent any such matters from entering any controlled waters, if there is any likelihood of this happening. The NRA didn't prosecute in this case because pollution wasn't apparent at the time. The LA, Breckland District Council, has the power under Sections 79-85 of EPA 90, to take action in respect of statutory nuisances, including premises which are in such a state as to be prejudicial to health. However, in those days (would be different now) the LA didn't prosecute if due to vandalism, which was the claimed cause.
13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* In the opinion of the Agency there was no other choice to the approach taken. If the Fire Service had had access to unlimited water supplies they would probably had to put the fire out because the plume of airborne pollutants. There was an unusual wind direction at the time of the incident, blowing the plume over the retail centre. If it had changed direction it would have blown straight onto the town (only 1 mile away) which would have caused serious problems. If the NRA had known of the risk to borehole water, remediation (removal of the surface solids) would have Been carried out quicker. If the incident had happened nowadays, the Agency would do more in terms of monitoring, etc.

14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* Because of the inadequacy of the fire-fighting water supply, the fire could not be extinguished as quickly as might otherwise be the case. If there had been mains water the fire would not have got hold. Physical safety of fire fighters and nearby community/workers took precedence (fire-fighters abandoned site for duration of the second day; and retail centre shut down because of plume) in this instance. Even so, no apparent significant adverse environmental impacts; but financial impacts quite considerable.
15	*Additional notes:*

Incident: **South Mimms Lorry Fire** **Date of Study:**
Source data: **J Arikans, EA Hatfield** **4 Nov 1999**
David McClement, Divisional Commander, Hertfordshire Fire & Rescue Services

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)	
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Probably only 1 pump.
3	*What type of site/ process/ industry was involved?* Lorry pulled onto hard shoulder of M25. Unsecured load fell forward onto hot exhaust. Packaging caught fire. Grid reference TQ 232 999.

4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* Initial information was scant – only azo dyes were known. It soon became apparent that there were containerised tanks of emulsion that could get into the water. The NRA received substance information by fax from Schering at 0932 h and toxicological advice from the WRc at 1916 h on day of the incident. Schering *Genitron* is an azo-initiator and low temperature chemical blowing agent composed of 2,2-azodi-isobutyronitrile (AZDN). It is a solid (powder), low volatility and insoluble in water. The substance burns rapidly and is classified as "Explosive/Harmful". Decomposition occurs at about 100°C for small amounts, but for larger amounts the exothermic decomposition is self-accelerating and requires lower, ambient, temperatures (around 50°C). Water should be used to combat any fire. AZDN can exhibit explosive properties if confined. AZDN is of moderate toxicity and low volatility. However, when it undergoes unrestricted thermal decomposition. It produced the much more toxic and volatile tetramethyl succinonitrile (TMSN), which poses a much greater risk by inhalation of dust/vapour/fumes (OES for TMSN is 3 mg m^{-3}) or ingestion (oral LD_{50} is 60 mg kg^{-1}). Fire-fighters must be protected against exposure using e.g. self-contained breathing apparatus. Disposal of AZDN by high-temperature incineration with flue-gas cleaning. Vinamul *3525* is a water-based polymer emulsion (vinyl acetate-chloride-ethylene copolymer). It is a milky-white liquid with a faint ester/alcohol odour and is fully miscible with water. It has no EEC hazard classification, but also contains formaldehyde (up to 0.05%w/w) and vinyl acetate (up to 0.5%w/w). Additional formaldehyde (MEL 2.5 mg m^{-3} 8-h TWA; 2.5 mg m^{-3} 15-min STEL) may be evolved when the dried emulsion is heated. Other than this it is not thermally unstable and has no hazardous decomposition products. There are no restrictions on fire-fighting media. Ingress into waterways may cause persistent milky discolouration. BOD may be harmful to marine organisms. The polymer is poorly biodegradable, but is not susceptible to bio-accumulation. The biological oxygen demand of other components may be harmful to aquatic organisms. Low concentrations of Vinamul 3525 in water for STWs are unlikely to reduce sludge activity; the polymer is largely absorbed on the sludge and thus eliminated from the waste stream. Recommended disposal routes are coagulation and separation for landfill or incineration; clarification of emulsion before discharge to sewer or open water. Vinamul *6241* is a water-based polymer emulsion (vinyl acetate-acrylic copolymer). Vinamul *8481* is polyvinyl acetate water-based emulsion. They are both milky-white liquids with a faint ester/alcohol odour and are fully miscible with water. They has no EEC hazard classification, but they also contain vinyl acetate (up to 0.5%w/w). It is not thermally unstable and has no hazardous decomposition products. There are no restrictions on fire-fighting media. Ingress into waterways may cause persistent milky discoloration. BOD may be harmful to marine organisms. The polymers are poorly biodegradable, but are not susceptible to bio-accumulation. The biological oxygen demand of other components may be harmful to aquatic organisms. Low concentrations in water for STWs are unlikely to reduce sludge activity; the polymer is largely absorbed on the sludge and thus eliminated from the waste stream. Recommended disposal routes are coagulation and separation for landfill or incineration; clarification of emulsion before discharge to sewer or open water. Nova-Glo *SX* orange fluorescent paint is a non-toxic polycondensate mixture (toluensulphanamide/ melamine/ formaldehyde condensate containing fluorescent dyes). There are no transport or packaging labelling requirements. It is an insoluble powder with a slight formaldehyde odour (free formaldehyde in powder 0.02-0.045%w/w). Because it is insoluble in water no ecological tests have been carried out. Thermal decomposition occurs at >220°C. At >130°C trace amounts of formaldehyde are given off and at >600°C on burning SO2, NOx and small amounts of HCN are evolved.

5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* At approx. 0215 h on 30.3.94, a lorry carrying 3600 kg of an azo dye, 10,000 kg of water-based vinyl emulsions and 2000 kg of a non-hazardous fluorescent orange pigment caught fire on the M25 at South Mimms. The details of the lorry load went up in smoke, so police had to phone the company owning the load. The lorry driver told the fire brigade (Herts. Fire Service, contact Station Officer Mills) that the load was not very nasty. Water was sprayed on the fire, but after a while it went bang! The area was covered in orange dye. The fire brigade decided to let it burn. The fire lasted only a couple of hours. This resulted in partial closure of M25 on the lorry side. Water and a cocktail of chemicals, including combustion products, flowed into the Mimmshall Brook immediately beneath the lorry. The incident was reported to the former NRA at 0305 h and they arrived on site at 0440 h. The NRA decided to be precautionary to avoid pollution of the swallow holes and associated boreholes and so called out in-house contractors to build a sandbag dam I km downstream adjacent to the nearest foul sewer (2ft dia.) to facilitate diversion of the polluted water. The dam was constructed just above the confluence with the Potters Bar Brook and two 6-inch pumps were set up just upstream, where the Potters Bar trunk sewer passed beneath. At 0930 h TWUL Trade Effluent staff were advised by NRA of the incident and asked for permission to pump to sewer. At 1000h, NRA provided chemical/ toxicity information. Once the load was confirmed as toxic, senior staffs were advised and the incident upgraded. Two TWUL Trade Effluent staff were dispatched to assess diversion options. It was necessary for NRA senior staff to lobby TWUL senior staff as the later were concerned that their consent levels would be breached and might knock out the STW. H&S precautions were assessed, and arrangements were made to evacuate the local and trunk sewers and relevant pumping stations (complete and confirmed by 1435 h). Sewage travel times, reception and treatment options were assessed with TWUL whilst surface and groundwater inplications were considered. Pumping commenced at 1700 h, as the front of the pollution reached the dam. One pump initially proved adequate. Marker dye was used by TWUL staff to tag the material. At 2140 h the contaminated flow reached Blackbirds STW where it was allowed to fill the storm tanks before being sent for full-scale biological treatment.. Heavy rain around midnight led to an increase in flow and at 0230 on 31.3.99, the dam overtopped. A sample of this overtopped water was taken and passed to TWU to analyse. At 0330 h the dam collapsed and some dilute contaminants went over into the brook. Estimated that 90% was pumped to sewer. Pumping continued, however, until 0330 h, by which time the flow was only a little hazy. Water from foul sewer received initially at Blackbirds STW was redischarged after full biological treatment back to sewer at 0400 h and received at Maple Lodge STW at 0730 h, where the material was to be held in storm tanks until any longer-term effects could be established. The process co-ordinator did not notice any adverse effects and at 1000 h, the contents were diverted to full treatment at Maple Lodge. Analytical results from Blackbirds confirmed treatability (700 $\mu g\ l^{-1}$ down to 1 $\mu g\ l^{-1}$). Considered acceptable to discharge to surface waters and first discharge of "treated" pollutant into River Colne occurred at 1900h 31.3.94. The EHO from Hertsmere Borough Council possibly attended the scene, but not confirmed. The HSE interviewed the fire brigade afterwards, because they were concerned about labelling.
6	*What were the chemical transformations and pathways to air, land and water?* Water and a cocktail of chemicals, including combustion products, was beginning to emerge from the motorway drains into the brook by the time the NRA arrived on site. The azo-initiator AZDN is a low-volatility powder, insoluble in water. It undergoes unrestricted thermal decomposition to produce the much more toxic and volatile tetramethyl succinonitrile (TMSN). The polymer emulsions are fully miscible with water and may cause persistent milky discoloration if ingress into waterways. BOD may be harmful to marine organisms. The polymers are poorly biodegradable, but are not susceptible to bio-accumulation. The biological oxygen demand of other components may be harmful to aquatic organisms. Low concentrations in water for STWs are unlikely to reduce sludge activity; the polymer is largely absorbed on the sludge and thus eliminated from the waste stream. The polymer emulsions also contained up to 500 $mg\ kg^{-1}$ formaldehyde and up to 5 $g\ kg^{-1}$ vinyl acetate. The orange fluorescent paint is an insoluble powder with a slight formaldehyde odour (free formaldehyde in powder 0.02-0.045%w/w). Because it is insoluble in water no ecological tests have been carried out. Thermal decomposition occurs at >220°C. At >130°C trace amounts of formaldehyde are given off and at >600°C on burning SO2, NOx and small amounts of HCN are evolved.

7 *What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.*

Air Pollution

Potential impacts:

Deposition and inhalation of toxic and volatile tetramethyl succinonitrile (TMSN), SO2, NOx and small amounts of HCN, formaldehyde, vinyl acetate

Assessment of impact:

Most of the 3,600 kg of azo dye was thought to have combusted, and would have formed TMSN. The then current HSE 8-h TWA Occupational Exposure Standard for TMSN was 0.5 ppm (3 mg m^{-3}). It is quite possible that this was exceeded leading to a significant exposure of any unprotected operational staff and motorway users. The evolution of SO2 could also have resulted in significant exposure. The quantities of formaldehyde and vinyl acetate present, and HCN and NOx generated are less likely to have resulted in significant exposures

Surface Water Pollution

Potential impacts:

Dissolution in firewater and ingress into waterway of tetramethyl succinonitrile (TMSN), SO2 to give sulphates, HCN to give cyanides formaldehyde and vinyl acetate. The polymer emulsions are fully miscible with the firewater and could lead to persistent milky discoloration and BOD harmful to marine organisms.

Assessment of impact:

Mimmshall Brook is a flat-bottomed 12ft x 4ft deep channel, fed by local surface water and then discharging via swallow holes into the adjacent aquifer. Water is subsequently abstracted at Three Valleys Water's boreholes (N.Mimms and Essenden) and TWUL's borehole (Rye Common).

AZDN degrades to tetramethyl succino-nitrile (TMSN). The WRc (fax, 30.3.94) proposed Suggested No Adverse Response Level (SNARL) concentrations based on toxicity data of 0.18 μg l^{-1} for TMSN and 0.35 mg l^{-1} for AZDN. It is thought that over the 10.5 h pumping period, around 90% of the pollutant was transferred to the foul sewer and that the remainder, in much diluted state, passed to the swallow holes. There were no problems at the Blackbirds/Maple Lodge STW. Samples taken on 31.3.94 showed the following:

- At dam breach, showed 39μg l^{-1} TMSN in brook, only very low levels of vinyl acetate and chloride were found.
- At STW, low levels of TMSN (max. 1.75 μg l^{-1}) but current flows (x 50 dilution) would provide adequate margin of safety
- Low concentrations of the emulsions in water are reportedly unlikely to reduce sludge activity at STWs; the polymer is largely absorbed on the sludge and thus eliminated from the waste stream. This was confirmed by observations at the STWs.
- Maple Lodge STW had achieved full treatment and with dilution available in the Colne and Thames, the resulting levels of TMSN were about 10 times less than the "sensitive" level of 0.3 μg l^{-1}. (It is not clear how TWU derived this criterion.)

A microinvertebrate study was also carried out on 31.3.94 by the NRA at three sites on the Mimmshall Brook, one point close to the point of the incident, one about 4 km downstream and a third above the pollution point of entry. No dead microinvertebrates were found at any of the sites. One dead stickleback was found immediately downstream of the incident, none at the other sites. Biological water quality was scored using the Biological Monitoring Working Party (BMWP) system for freshwater macroinvertabrates. Predicted scores of natural faunal characteristics for these sites under clean-water conditions were compared with observed scores. The BMWP scores were similar for all sites sampled, indicating that there was no effect on the macroinvertabrate fauna present in the river, attributable to the pollution. It was noted that the river was turbid and flow was high. It was suggested that heavy rainfall had probably assisted the dispersion of any chemical remaining in the watercourse after pumping to foul sewer.

In conclusion, there was no significant environmental impact on the receiving watercourse.

Flow

At the time when the dam was built (0440 h, 30.3.99), the flow in Mimmshall Brook was extremely slow.

Groundwater Pollution

Fairly significant impact on potable groundwater. Samples showed the following:

- At dam breach, showed 39 μg l^{-1} in brook which could have entered the aquifer and might result in approx. 0.1 μg l^{-1} on abstraction. Only very low levels of vinyl acetate and chloride were found. Time of travel to boreholes estimated 1-3 days.
- Picked-up at one of boreholes (Rye Common) by Three-Valley Water Company, and shut down for a week or so and pumped to waste. TMSN at 0.35 μg l^{-1} with increased turbidity.

8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Quantitative data to back-up impact on surface water and ground water. No hard data on air quality impact.
9	*What was the effect on people physically? e.g. injury, mortality, morbidity* No injuries to driver, emergency services or public.
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* There was some worry among the operational staff on the scene that cyanides could have formed (like the Allied Colloids fire). The NRA did put out a press release as a precaution in case there were any knock-on problems. However, there was no local interest.
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* TWU presented NRA with a large bill, of which an agreed, smaller amount was paid. NRA pollution staff spent 31 hours totalling £400; microinvertebrate study cost £154; analysis costs not known; costs for dam were £955 material costs and £880 labour costs. TWUL had costs of £18,666. These were initially all invoiced to NRA, but after negotiations the NRA agreed to pay £10,178 and TWUL agreed to seek the balance from the lorry driver. The motorway recovery company was also trying to claim their costs for recovery and storage. The last file record on this (14.9.94) shows that the owner-driver had not replied to letters, had left his last known address, and none of the parties or the police had managed to track him down. No information on costs for police. No information on costs for fire brigade.
12	*What were the legal implications?* Treated as an accident. No-one could prove negligence due to insecure load. HSE took no further action after confirming that there was no requirement for the load to be labelled hazardous. However, the police were pursuing the owner-driver on the issue of insurance and documentation and Road. Traffic Act violations.
13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* There was no decision for controlled burn based on BPEO. The fire brigade acted on basic information that suggested there would be no problem. However, after the dye went-up, there was no option but to stop putting it out. It therefore became a controlled burn by default. Because the NRA operational staff took a precautionary approach to the fate of the firewater runoff up to that point, a far worse environmental impact on waters/ groundwaters was avoided.
14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* In this instance, as should always be the case, the physical safety of the emergency services and other road users took precedence. Once this safety had been established, considerable effort went into protecting the environment. The reported costs for this incident were £21k, although there were almost certainly hidden costs that would add to this total. None of these costs appear to have been recovered. For road incidents, there is a big problem balancing the environmental impact with the impact of shutting the road. The latter has not been costed.
15	*Additional notes:* One idea for prevention equipment is to try and couple-up a drain-stopper from the highway drain to a disposal tanker, but would need good planning and practice. This incident showed how political things can get: it was necessary to get top management involved on both sides (of NRA and TWU) to get the water pumped to sewer. The NRA (Environment Agency) operational staff just don't have time for this – need a Memorandum of Understanding?

Incident: South Mimms Lorry Fire **Date of Study:**
Source data: J Arikans, EA Hatfield **4 Nov 1999**

	Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?*
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
3	*What type of site/ process/ industry was involved?*
4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.*
5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*
6	*What were the chemical transformations and pathways to air, land and water?*
7	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* **Air Pollution** **Surface Water Pollution** **Flow** **Groundwater Pollution** **Land Contamination**

8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
9	*What was the effect on people physically? e.g. injury, mortality, morbidity*
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.*
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?*
12	*What were the legal implications?*
13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*
14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
15	*Additional notes:*

Case study: Sun Chemical Ltd Fire in Slough, 12 June 1997
1 st Organisation: Slough Borough Council
Interviewee: Nigel Dicker, Head of Environmental Protection Services
Interviewer: Michael Schwar, Schwar Consulting
Date of interview: 1 December 1998, 11am to 1.30pm

2nd Organisation: Royal Berkshire Fire & Rescue Service
Interviewee: Info provided by Des Tidbury
Date of telephone interview: 23 April 1999, 3.15pm to 3.30pm
Interviewer: Michael Schwar, Schwar Consulting
Date of assessment: 19 April 1999

3rd Organisation: Environment Agency, Frimley Business Park, Camberley, Surrey GU16 5SQ
Interviewee: Guy Elliot, Site Support Officer working to Neil Martin, Site Controller
Interviewer: Michael Schwar, Schwar Consulting
Date of interview: 20 April 1999, 3.45pm to 5.00pm

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
1	EHO	*Do you have available any detailed information on individual controlled burns in the UK or EC?* Sun Chemical Industry Ltd, Albion Close, Petersfield Avenue, Slough.
	FB	The Sun Chemical Industry Ltd was certainly not a controlled burn incident, although it had massive environmental considerations. See CD-ROM Fire Prevention Journal, No 301, page 6, July/Aug 1997 Fire Journal, page 9, October 1997 The Stag, pages 14-15, Summer 1997
	EA	Sun Chemical Industry Ltd, Albion Close, Petersfield Avenue, Slough. OS Grid ref: SU9825 8030
2	EHO	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Acute harm to human health is one criterion. Very difficult to categorise in quantitative terms. Each case is treated on its merits. This particular fire was described by the fire service attending the site as 'this is a big one!' and so the local emergency planning procedure was activated.
	FB	No response
	EA	There is an EA system for categorising incidents. The Sun Chemical fire was a Cat1 incident, but now it would be classified as Cat1A. Cat1 is a potentially major impact incident; 'A' means a full scale emergency response involving the whole area.
3	EHO	*What type of site/ process/ industry was involved?* The operation is not Registered as a Part A or B process. It seems that the site is used mainly a storage facility but this would need checking with the operators. Sun Chemicals Ltd hold substances relating to the printing ink industry. Cause of fire not reported but eyewitness accounts show that the fire originated in the room where drums of pigment are gently heated by hot air and/or radiant heaters to allow the ink to flow out of the drums.
	FB	100m x 50m single storey ink production plant

	EA	Factory produces varnishes/inks. Ink used in the printing of food labels. Made of highly purified paraffin mixed with dye, mostly red in colour. Labels would comprise a waxed paper base and the whole label edible, i.e. non-toxic.
4	EHO	*What substances were involved and what quantities?* Difficulties were experienced in identifying the precise substances involved. No one on site seems able to say. The fire brigade identified substances involved from drum labels. An important component was Paracet (which was temporally confused with a much more dangerous substance Paracept (a herbicide)). No information was available on quantities.
	FB	Sun Chemical Ltd staff were on site and very helpful advising precisely what chemicals were involved. Access to this information was not a problem. 100 tonnes ink pigment; 90 tonnes ink vehicle (clear lacquer); 30 tonnes solvents (paraffins) equivalent to 27,000 litres.
	EA	Ink and refined paraffin called Paraset. On site 100 tonnes ink, 90 tonnes varnish, 30 tonnes solvent plus various other chemicals. Large quantities held on site in storage tanks. Final product held in 100s of 45gal/200litre drums.
5	EHO	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* The sequence of event was: • Someone from Sun Chemical Ltd alerted the fire brigade • Fire brigade advised on arriving on site that it was 'a big one' and their mobilisation officer alerted the relevant organisations including EA and local council's Piece-time Emergency Planning Officer (EPO), Area Health Authority (AHA) and police. • EPO decided to activate Emergency Operation Centre (EOC) at the Town Hall • EH Services had by this time been advised by the EA that there was a major fire • Head of Environmental Protection Services (HEPS) went to EOC to provide necessary advise • FB requested the services of an Environmental Health Officer; one was assigned to this task although it was unclear whether he should go to the brigade station or the fire ground. • The EA came on site and as this was perceived as 'a big one' the site operations became their responsibility • The HEPS took responsibility to establish the risks associated with the substances identified on site. • The HEPS contacted ICI Paints who have a site nearby for advice on likely substances; ICI were very helpful. • The AHA was asked for advice on the toxicity of substances identified. They made use of the Chemical Incident Response Service (CIRS) run by Dr Virginia Murrey at Guys Hospital. The HEPS cross-checked advice coming from all these parties with information given in his own reference sources (e.g. Croner). • A local Help Line was set up with 2 phones; there were lots of calls from the public (dozens rather than hundreds) over a few hours. • The only omission seems to have been that no one advised the rail services of the potential dangers and trains continued to run passing through thick clouds of smoke.

	FB	The sequence of events (taken from The Stag) was: • Alarm operated at Sun Chemical Ltd at 8.27am 12 June 1997 • 2 Slough appliances on site at 8.32am; smoke issuing; order to Make 6 pumps • Sun Chemical staff advised chemical on site were of a limited toxic hazard although the fire load was large • Two nearest residential streets said to have been evacuated as premises and railway at risk from exploding drums • Railtrack advised train movements stopped at 8.42am • Chemical Incident Unit sent to site at 8.48am • Order to Make 8 pumps at 8.51am • Order to Make 12 pumps and foam supplies requested at 9.57 as Sun Chemical advisors indicated that water should not be used on solvent fires, and it was evident that flames were coming from a roof area holding 27,000 litres of solvent • Railtrack running trains under caution closed all tracks at 10.07am • Fire, Police, Ambulance and Emergency Planning depts at district and county level considering joint approach should further evacuation be necessary • Solvent tanks ignited and building collapses • Order to Make 15 pumps to support EA who were already actively working at the scene to try and prevent run off from reaching open water courses • Foam attack commenced at 11.25am using FB's foam tanker supplemented by crews from Bucks, London and neighbouring ICI with their AFFF foam supplies. • At height of fire 115 fire-fighters were using 4 foam branches, a HP monitor, 2 ground monitors, 2 Jet Masters and 6 water jets. • Chemicals on site identified and quantified to be pigment, vehicle and solvent at 12.21 • Fire surrounded at 13.30; incident scaled down at 15.06; stopped at 15.50; Major Incident room closed at 17.03.
	EHO	The sequence of event was: • EA advised of fire by Fire Brigade at 9.01am 12 June 1997 • GE was dealing with an oil incident in SW London at the time he was told to report to Slough - see EA Incident Report THS11997032443 • Paul Greaves was Base Controller and Neil Martin was Site Controller • Details of drainage system of area are on computer and available on site; GE went straight to the outfalls into the Myrke Ditch (which is a water course ca 1m wide) and runs into the Thames; outfall was black, stank with visual evidence of paraffin and red dye • Clearly needed to prevent polluted water from reaching the Thames; options were to use booms, pump to land or to dam the ditch; boom not appropriate, pump to land not chosen as there were two nearby surface and ground water extraction points, so damming of ditch decided • Explained to local contractor using a JCB the nature of the problem and got him to dam the ditch. • FB contained the fire using water jets followed by a massive smothering with foam; this limited the volume of water flowing to the outfall • Eventually arranged for tankers to discharge to local sewage works; sought use of pumps from local sources; removed 0.5 million gals from ditch and in addition firewater from site of fire • Water stored in storm tanks at the sewage works and gradually bled through the sewage system
6	EHO	*What were the chemical transformations and pathways to air, land and water?* The most obvious pathway was a dense plume of smoke moving Northeast from the site, and firewater run-off going to the surface drainage system. Fall out of smoke was not considered to be a problem. The EA asked the EH Dept to track the plume and advise if it grounded; they did and it did not.
	FB	Flames and smoke issuing from roof blowing from SSW. Once solvent storage tank ignited thick smoke at ground level on the building's east face. Water run off at risk of reaching open water courses.

	EA	No special chemical transformations. EA do not deal with emissions to air from fires; only concerned with Part A processes; they could possibly have done plume modelling for the LA, but the Met Office would probably have been the first port of call for this advice. Concerned over potential problem of pumping to land as polluted water may seep into ground water which had the potential of requiring surface and ground water abstraction to have to be stopped; in this case, however, there would probably have been enough bank-side storage for abstraction; damming was the best solution.
7	EHO	*What was the effect on people, both physically and emotionally? e.g. adverse publicity, hostility from local community.* There was obvious concern from local people phoning the Help Line. There were problems of split responsibility. The EH people answered questions relating to air quality; the EA answered questions relating to water quality. This is unsatisfactory when dealing with people who do not understand the split in responsibilities. There is also the thought on liability if advice is given on a subject outside of one's responsibility - although this was not an impossible problem to cope with. Apparently a director of the EA passed by on a train and asked why was a train allowed to pass through dense smoke from a major fire so close to the railway? The HECP did not consider it was his responsibility to tell the railway operators what to do in such an emergency situation. This question seems to be still unanswered.
	FB	FB opened a Major Incident Room at Brigade Head Quarters and police instigated a Silver Control in Slough. No need for a major evacuation. Some nearby firms evacuated before FB arrived on site. Question received from residents, schools and factories - should we evacuate? Local EHO from Slough BC deployed to monitor the air pollution situation. Fire fighters suffered minor burns. Some crew were blown to ground by blast wave and were taken to hospital by ambulance. One received bruising of leg. 3 members of the public suffered from smoke inhalation.
	EA	None to GE's knowledge EA has a trained media officer on site to communicate with the media and keep them informed of what is happening. Good working relationship with local resource sources such as JCB and pump providers.
8	EHO	*What was the financial impact? Attitude of Operator and insurers?* As far as the Borough was concerned 8 senior officers were involved in the incident for a day.
	FB	None. (Sometimes the FB may get involved in cleanup operations, in which case they will make a charge to the EA. If the EA can recover these costs from whosoever they will be paid, otherwise not)
	EA	The EA recorded the following charges _ see Incident Report - against this incident: • Staff costs £4371 • Material costs £1649 • Contractor costs £17,271 (tankerage over a 24 hour period) • Sample costs - chemical analysis £678 Local 'helpers' did not charge for provision of resources The above cost were all recovered from Sun Chemical's insurance In addition Thames Water would have their own costs relating to water treatment, but they did not make a claim
9	EHO	*What were the legal implications?* There was technically a Statutory Smoke Nuisance. But as this was an accident the Council took no action. It is not known what action was taken by the EA or the HSE in respect of possible infringements.
	FB	None that they know of; the fire was not malicious and was considered accidental. The HSE were on site and probably made their own report.

	EA	EA does not tend to prosecute in the case of fires; the reason for this is not clear but maybe there are problems in identifying liability
10	EHO	*What was the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term?* Once the substances had been identified, reference was made to various chemical data sheets on the effects on human health. Croners, for example was used, as were data sheets faxed through from ICI Paints who have a site close to Sun Chemicals. In addition the Area Health Authority (Berkshire) based at Battle Hospital in Reading was asked for advise. This was provided by Dr Abide and Dr Philip Chan who are medical directors of health. They have links to Chemical Incident Response Service (CIRS) based at Guy's Hospital and run by Dr Virginia Murrey. In the opinion of the HECP there was no great immediate threat to human health, although schools were advised that if the plume did ground people show go inside and shut the windows. Fire fighting water run-off issues were dealt with by the EA. They and the fire service should be approached to find out how the decision to dam the Myrke Ditich was reached. Local surface water drains run into the Myrke Ditch which is some distance away.
	FB	FB used BA. The fire was not considered especially toxic. Normal precautions taken by fire fighters.
	EA	Air pollution comprised of thick smoke/particulates - but this is not a concern of the EA. The medium burning was considered to be non-toxic and not a great threat to human health. Foam protein may have an environmental impact, but its use more than compensated for the alternative which was to use large volumes of water which would have been environmentally catastrophic.
11	EHO	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* There was no formal environmental impact assessment made prior to the incident. It appears that all reasonable attempts possible were used to obtain objective information from local sources as well professional advisory sources - see previous answers. Slough BC are now subscribers to CIRS. The assessments made at the time of the incident related to effects on human health and safety.
	FB	The FB has a '11D Card' which sets out the basic hazards associated with the site. The danger of this is that often when the FB arrives on site the name of the company has changes, as have the materials to be found on site. See Question 14 for further information.
	EA	The assessment was very much a 'gut feeling' on the spot. No previous assessment of potential problems had been carried out as far as was know. If it was a CIMAH or COMAH site this would have been required - but it probably did not fall under this heading. Notwithstanding this Sun Chemical Ltd was perceived as a big company and they would in all probability have carried out a risk assessment. In GE's opinion there was no chance of being able to design the site to ensure containment of the volume fire fighting water
12	EHO	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* The action taken was not based on controlled burn considerations, although in hindsight it fits in with the controlled burn philosophy. Water applied to the fire was managed in a controlled manner.
	FB	Probably. The information provided by Sun Chemical Ltd allowed them to use massive foam smothering. The HazMet officer advised on need for foam. Required waiting for foam supplies to come on site from ICI, Bucks and London, although London supplied were not used. No use using foam unless there was a sufficient supply to sustain the coverage. If they had not done this no telling what the outcome would have been. 1 fire fighter was injured as a consequence of an explosion.
	EA	The action taken was considered to be the best option available. The fire had to be put out quickly because of the proximity to other industrial operations/residential buildings/railway. Letting it burn to restrict the use of water was not an answer; the use of a massive dose of foam was the correct solution in this case.

13	EHO	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* The action taken appeared to be simply to get the fire as quickly as possible. This needs cross checking with the EA and Fire Service.
	FB	View was that the approach adopted was about right in the circumstances.
	EA	Probably/possibly yes, but do not have all the information necessary to make this judgement.
14	EHO	*Additional notes:* Made reference to a major German fire at Sandoz - thought this cause pollution of the Rhine. In the past there appeared to be a 'them' and 'us' relationship with the EA. Communications were not good. Now things are changing. HECP attended an excellent workshop on the management of incidents run by the EA at Bradenham, High Wycombe recently. The local council has clear documented procedures to deal with incidents, as do the fire service. It is less clear whether this is so for the EA. Since this incident they has provided EHO with easily identifiable clothing when assisting the fire service at fires. Contact people at the EA, Ladymede, Guildford are: Paul Greaves and Neil Martin (Tel: 01483 577655/561598).
	FB	It is planned to install a generic risk assessment system onto their computer called ORIS (Operational Risk Intelligent System). Vital that it be maintained up to date. Onus may be on owner-occupiers to keep FB informed of changes. (We should find out more about this package.)
	EA	The response was FB driven; the FB was responsible for dealing with the incident with others in attendance Would not change the overall management procedures. If the water runoff had been to the Thames rather than the ditch a difference scenario would have occurred requiring different decisions.

Garner Osbourne Circuits Ltd

Case study: Garner Osbourne Circuits Ltd
1 st Organisation: EHD, West Berkshire District Council
Interviewee: Duty Officer, Alison Shaw
Interviewer: MJRS
Date of interview: 16 November 1999

2nd Organisation: Royal Berkshire Fire & Rescue Service
Interviewee: Info provided by Eugene S Johnson
Date of telephone interview:
Interviewer: Information obtained from Fire Service documentation
Date of interview: N/A

3rd Organisation: Environment Agency, ISIS House, Howbery park, Wallingford, Oxon OX10 8BD
Interviewee: Information obtained from Sarah Powell, Team Leader Campaigns, documentation
Interviewer: No interview
Date of interview: N/A

4th Organisation: West Berkshire District Council – could find no records of the fire.

Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)		
1	EHO	*Do you have available any detailed information on individual controlled burns in the UK or EC?* No one in the EH Department recalled the fire, and there was no information of file.
	FB	Garner Osbourne Circuits Ltd, Unit 7 Bone Lane, Newbury, Berks.
	EA	Garner Osbourne Circuits Ltd, Unit 7 Bone Lane, Newbury, Berks. OS Grid ref: SU4815 6715
2	EHO	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)*
	FB	50 fire-fighters in attendance
	EA	Minor Category 3; Type: Chemical and other organics involving fish kill (11-200)
3	EHO	*What type of site/ process/ industry was involved?*
	FB	Believed, though not certain, to involve potential chemical hazards
	EA	Electroplating factory
4	EHO	*What substances were involved and what quantities?*
	FB	Initially uncertain
	EA	30% Copper sulphate 1200L, 20% sulphuric acid 100L, 20% nitric acid 100L and etching strength ammonium hydroxide 500L.
5	EHO	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?*

	FB	Fire Service: Initially 2 pumping appliances then up to 50 fire-fighters When District Commander came on site, it was recognised that the Officer in Charge had failed to recognised the potential environmental hazard and activities carried on at Garner Osbourne. The Berkshire Street Atlas helped in identifying possible sensitive targets including rivers. Fire Officer in Charge then contained most of chemicals in the Fire Service emergency plastic tank and within the floor working area. Minimal quantities of water used. Fire Service supervised removal of water, which was acidic in nature, by special tanker. Fire Service said to have been on site for 18hours from when the alarm was raised.
	EA	NRA: Telephone support plus 1 officer on site who was delayed in getting there because of a road accident. . The initial response by the NRA was considered slow (by SD). Thames Water would not accept the contaminated water to foul sewer.
6	EHO	*What were the chemical transformations and pathways to air, land and water?*
	FB	Some chemical effluent clearly left the premises (and entered the river, accounting some fish kill). Escaped effluent was lifted into portable containment; drain blockers and dollies were also used. Contaminated water pumped into a containment dam using a Cresta Pump, supplied by NRA. Approximately 3000L on contaminated water were retained.
	EA	Surface water via drains to River Kennet. Fish were killed in a minor tributory which has an overspill to the Kennet about 500m downstream. Concern that there may have been cyanides and solvents present - but this was denied by factory owner and so building was allowed to burn. NRA provided specialist equipment such as drain blockers and pumps. Containment action taken avoided a more serious incident developing. Other chemical not currently in use were safely stored.
7	EHO	*What was the effect on people, both physically and emotionally? e.g. adverse publicity, hostility from local community.*
	FB	Fire Service allowed the building to burn for both Health & Safety and environmental reasons. Meridian Television was on site filming and interviewing to keep public informed.
	EA	Unknown. But press coverage seems to be favourable and the actions of the services and others was excellent.
8	EHO	*What was the financial impact? Attitude of Operator and insurers* Factory owners said that staff and customers rallied round. Production said likely to commence within a week. But there was loss of a factory building and loss of stock.
	FB	Unknown.
	EA	Unknown. But NRA costs were put at £390.
9	EHO	*What were the legal implications?*
	FB	None identified
	EA	If the incident had resulted in major pollution the company could have been prosecuted
10	EHO	*What was the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term?*
	FB	As no cyanide or solvents were presently it was considered safe to let the building burn.
	EA	Some dead fish, but considered a short term problem only
11	EHO	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?*
	FB	Not stated
	EA	Opinion
12	EHO	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?*

	FB	All equipment, procedures used and liaison considered to have worked effectively
	EA	Yes
13	EHO	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
	FB	
	EA	The documentation seen seems to reflect the view that the balance was judged to be about right for the circumstances
14	EHO	Additional notes:
	FB	None
	EA	None

Incident: **Associated Octel, Elsmere Port Fire, 1st February 1994**
Date of Study: **20th April 1999**
Source data: **HSE Report, C30, 07/96.**

	Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?* Incident at Elsmere Port, is a good example of a fire incident which could have either been avoided or its consequences reduced with improved emergency planning and provision for emergency response, risk assessments and safety management systems. It should be noted that No serious injuries, ill health or environmental effects resulted from the release and fire but this was a serious incident at a major hazards site.
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* **Nature** Ethyl Chloride release followed by ignition and Fire. **No. Of Pumps** One works fire tender, followed by 3, 5, 4,10 appliances being called to the scene as the incident and response progressed (23 Total). There were also Octel and Shell foam tenders using their roof mounted monitors.
3	*What type of site/ process/ industry was involved?* **Site** Elsmere Port site, some 87 acres, belongs to Associated Octel Company Limited (Octel). It lies within the Borough of Elsmere Port and Neston in the Northern part of Cheshire. The factory is located in a large industrial complex with several major chemical plants nearby. To the North is the Manchester Ship Canal and the Mersey Estuary (SSI). To the South West , some 250 metres, there is a residential development. Within 1.5 km of the site there are: large residential areas, main shopping and public amenities such as schools, council premises and also the Elsmere Boat museum. **Process** The site has been in operation for over 40 years as a process site with the prime activity of producing motor fuel anti-knock compounds i.e. tetra ethyl lead, tetra methyl lead, sodium, chlorine and ethyl chloride. **Industry** Chemical Industry employing approximately 1650 people.

4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* **Substances** Ethyl Chloride, Hydrogen Chloride, catalyst Aluminium Chloride. The crude Ethyl Chloride reactor liquor was approximately 90-95% ethyl chloride, up to 2% hydrogen chloride, 0.5-2% polymer oil and 0.1-1.5% aluminium chloride. The main hazard was ethyl chloride with flammable risk, although hydrogen chloride is a toxic and corrosive substance and readily forms hydrochloric acid mist on contact with moisture in the air. **225 litres of foam and large quantities of firewater run off released into nearby water course.** **CEA Classification** Ethyl Chloride: F1g T PN2 Z 1, i.e. combustible gas, toxic to humans, moderate risk of water pollution, air pollutant. Hydrogen Chloride: F6l Co PN4, i.e. Non-combustible liquid, gives off corrosive gases or vapours when burning, in general no risk of water pollution. Aluminium Chloride: F6s Co HT C PN3, i.e. Non-combustible solid, gives off corrosive gases or vapours when burning, when in contact with water gives off poisonous/caustic/corrosive/irritating/foul smelling gases, corrosive resulting in serious tissue damage within a short period of time to skin, mucous membranes and eyes. **Occupational Exposure/Explosion Limits** Ethyl Chloride: For inhalation OES 8 hour TWA is 1000ppm, IDLH value is 20000ppm. For explosion LEL is 3.6% by volume. Hydrogen Chloride: OES 15 min STEL is 5 ppm. **Quantities** Octel estimate that 5 tonnes of ethyl chloride was lost prior to ignition. 1.5 % of this was HCL, the main toxic hazard.

5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* **Release** From the time the ethyl chloride release occurs and the emergency services are informed, one and a half hours action is taken to isolate the leak to suppress the further release of vapours and prevent the cloud spreading. Initial information given to the Fire Brigade is interpreted as "toxic" and responded accordingly. The plant supervisor is the sole company representative and arrival of the first Octel manager one hour and 10 minutes after the release changes the tactics of the fire brigade from playing jets of water on the pool of liquid to laying down a blanket so as to suppress the release of flammable vapours. The laying of foam begins 1 hour 35 minutes after the release. **Ignition and Fire** Ignition occurs 1 hour and 45 minutes after the initial release. Flammable vapours of ethyl chloride ignite creating a major pool fire and jet flames. The foam attack progressively reduces the fire to two main areas; the base of the reactor and the tops of the horizontal vessels. Approximately 3 hours after, the fire is contained and control is achieved within these areas. The fire is allowed to burn at a reduced scale and declared extinguished some 10 hours after its start. **Other Responses** NRA is also in attendance from about the point of ignition onwards. A medical officer from the local authority attends the incident and makes contact with local hospitals. The adjacent roadways, Oil Sites Road and Bridges Road are closed as well as the nearby M53 motorway junctions 9 and 10. A roadworks gang on the M53 is evacuated and there is also partial evacuation of two local factory sites, Zeneca and the North side of Shell UK Ltd.
6	*What were the chemical transformations and pathways to air, land and water?*
7	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* **Water Pollution** 225000 litres of foam and large quantities of firewater run off were discharged into the nearby water course - South Boundary Ditch. The NRA were in attendance during the incident and the pollution load was not of concern to the NRA due to the existing condition of the watercourse. NRA also concluded that the South Boundary Ditch discharged into the River Gowy at such a low rate that any contamination was diluted out. **SSI** HSE recorded that it was not aware of any damage to the Site of Scientific Interest located in the Mersey Estuary.
8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Visual checks by the NRA since the incident have shown no lasting effects.

9	*What was the effect on people physically? e.g. injury, mortality, morbidity* **On-site** One Octel employee and 17 firemen received treatment during the night of the incident. The employee who had been struck and contaminated by process liquids became ill and was detained in hospital overnight. His subsequent absence from work for more than three days was formally notified to HSE under RIDDOR. Two firemen were taken to hospital but not detained. **Off-site** There were a small number of complaints of ill health. Some of those working at the adjacent Shell refinery displayed symptoms consistent with exposure to HCl and there was one formal notification of ill health to HSE under RIDDOR to an employee of a catering company operating on site. The local authority was not aware of any further instances of members of the public being affected.
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* There is an unusually high concentration of large chemical plants around the Mersey Estuary and between 1990 and 1994 there had been several other incidents that had aroused public concern about the hazards and the inadequacy of the control measures especially for toxic hazards. Emergency services were swamped with telephone enquiries from anxious residents. Immediately after the incident Ellesmere Port and Neston Borough Council alone is reported to have received 40-50 contacts from the general public. HSE report states that several local residents also telephoned or wrote to HSE's area office to voice their concerns as well as a number of representatives of local councils and residents associations made their views known to HSE either in meetings or by correspondence.
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* The ethyl chloride plant was extensively damaged and on completion of HSE's on-site examination it was demolished. A new plant has been built at an estimated cost of £6.1 million and was commissioned in January 1995. Other plants on the site were not damaged. Production of chlorine continued at a reduced level. Ethyl chloride was imported by road, rail and sea to make-up for the loss of its production. The company estimate the costs of transport and of the disruption to the process may be several times the rebuild cost. The company was also fined £150,000 for contravening Sections 2 and 3 of the Health & Safety at Work etc Act 1974 and were ordered to pay full costs of £142,655. Payment of costs was subject to Appeal by the company at the time HSE published its report in 1996.
12	*What were the legal implications?* HSE served a Prohibition Notice prohibiting the Associated Octel Company Ltd. from restarting production of Ethyl Chloride until the company had demonstrated that the "major accident hazards had been identified and that appropriate precautions had been taken to limit the consequences to persons and the environment". On 2 February 1996 the company pleaded guilty in Chester Court to contravening Sections 2 and 3 of the Health and Safety at Work etc Act 1974 for failing to provide and maintain plant and systems of work which were safe and without risk to health. As a result, the company put at risk the health and safety of employees and other people, in particular the fire fighters involved. The company was fined £150,000 (£75,000 0n each of the two charges) and were ordered to pay full costs of £142,655. Payment of costs was subject to Appeal by the company at the time HSE published its report in 1996.

13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* Initial incident was a release and the response by the fire brigade, due to the limited information available at the time, was one for the control of a "toxic" incident. The fire risk was not considered until the arrival of senior Octel management some time later. It was necessary to lay foam down on the release in order to reduce vapour release and cloud movement/ dispersion. Although this was done the vapours did ignite. The controlled fire was under the ethyl chloride reactor with a large inventory and a strong potential of a BLEVE and also the tops of the horizontal vessels. The incident was monitored by NRA and although 225000 litres of foam and large quantities of fire water run off were discharged into the nearby water course - South Boundary Ditch this was not a major concern to the NRA due to the existing condition of the water course. NRA also concluded that the South Boundary Ditch discharged into the River Gowy at such a low rate that any contamination was diluted out. It can therefore be concluded that with hindsight the chosen option of controlled burn was BPEO.
14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?* In view of the incident, its type, initiation and progress; this would not have been an issue in this case.
15	*Additional notes:* Ethyl Chloride plant was totally destroyed but production of chlorine continued at a reduced level. Ethyl chloride was imported by road, rail and sea to make-up for the loss of its production. The company estimates the costs of transport and of the disruption to the process may be several times the rebuild cost. It would be of interest to find the magnitude of this as well as discuss to what extent this was covered by insurance.

Incident: **Toluene tanker fire, Cleveland, 19th November 1986**

Date of Study: **September 1999**

Main source data: **Divisional Officer A. Dale, Cleveland Fire Brigade**

	Study of individual controlled-burn incidents (This will be required only for a selected number of model controlled-burn scenarios and should include all relevant information available on the environmental impact assessment of the controlled burn. These questions do not need to be covered in detail during the initial telephone discussion)
1	*Do you have available any detailed information on individual controlled burns in the UK or EC?* At 08:12, between the A174 junction and the Mandale interchange of the A19, a car from the heavily congested northbound carriageway crossed the central reservation into the path of the southbound tanker. The evasive action taken by the tanker driver caused the tanker to skid and collide with the oncoming vehicle. This resulted in; • The projection of the car back across the central reservation into oncoming northbound traffic, causing 5 northbound cars to become involved in the incident. • The tanker overturning onto its side, facing the opposite direction. The events upon the tanker caused rupturing of the manlids on each of the 5 compartments, allowing the flammable liquid cargo to be released onto the road. Reports by the tanker driver state that the tanker had caught fire before it had come to stop on the central reservation. The heat produced by the friction of the crash then allowed the spilt toluene on the roadway to ignite.
2	*How can the incidents be categorised? (e.g. by nature, size, No. of pumps)* Primarily a chemical fire, involving 4800 gallons of toluene. Cleveland Fire Brigade was called at 08:14, and before arrival at 08:19, the tanker driver, Mr. Dennis McManus, aged 54, attempted to fight the fire using a 10kg dry powder extinguisher. Upon arrival of the Fire Service personnel with 2 pumps and 1 emergency tender, the fire officer in charge sent a message for immediate assistance - "Make pumps 6, foam tender required, inform police and ambulance." At 08:30, a further message to make pumps 10 for water supply purposes was sent, instructing appliances to approach from both north and south directions due to the severe congestion.
3	*What type of site/ process/ industry was involved?* A road tanker carrying toluene, travelling on the A19, a main arterial dual carriageway, running north/south through Cleveland. There was no central reservation barrier to prevent the initial action of the car crossing into the oncoming path of the tanker. Toluene is a commonly used petroleum spirit, manufactured at ICI North Tees Works, which distributes around 5-million tonnes of chemical products annually. Toluene is a derivative of crude oil, refined at the North Tees site. 4800 gallons were being transported to Huddersfield to be made into dye. At the time, the road was not provided with water mains or hydrants, and so the nearest adequate supply of water was located in a trading estate, half a mile away, across a field. "Although the officer in charge of the first attendance was able to make an attack on the burning cars, because of the lack of water supplies on this type of roadway it was a considerable time before resources were able to be deployed and arranged to make an attack on the burning tanker, although in this instance, the decision was taken not to extinguish the tanker fire."
4	*What substances were involved and what quantities? Consider releases to air and to water. what were the concentrations, release rates, total loads, peak releases? Use matrix to estimate dose.* 4800 gallons of toluene was involved. The burning toluene on the road entered drains, resulting in localised drain fires

	up to 400 meters away from the main incident. 3 cars in close proximity to the incident, which were involved in the secondary collision were alight. The drivers, and any passengers of these and 2 other nearby cars left their vehicles by their own efforts due to fire spread.
5	*What was the operational response of the fire service, the local authority, the Agency, the site operator, or any other parties involved?* • Cleveland Fire Brigade was called at 08:14, and arrived at 08:19. The fire crews initial action concentrated on the fire-fighting search and possible rescue from the several cars involved, and the control of the tanker fire. • The driver of the tanker was located, and it was established that the chemical involved was toluene, whereby information from Chemdata (the chemical database) was requested. • At approximately 08:40, Mr. Cyril McChesney, a member of the ICI G1 Division (Chemsafe) with expert knowledge of toluene, who happened to be a passing motorist reported to a police patrol vehicle. • At 09:00 following the liaison and consultation of Mr. Cyril McChesney, the technical advisor, with the divisional commander and the Chief Fire Officer, the leaking toluene was left to burn in a controlled manor, rather than extinguish it. At this point, all persons were accounted for, and a water relay was completed, with foam branches laid out in preparation to extinguish the burning tanker, should the situation change. • The controlled burn continued until 15:30, when the level of toluene remaining in the tanker (approximately 1800 gallons) was below that of the ruptured manlids. The fire was then extinguished using foam making branches and the remaining toluene was removed for transportation, to the ICI plant. The empty tanker was then transferred to the low loader and moved. Overall this took several hours, and the incident was concluded at 20:43. • Other services attending the incident included police, ambulance, environmental health, electricity board, water board and an Imperial Chemical Industries Chemsafe team.
6	*What were the chemical transformations and pathways to air, land and water?* • Toluene has a toxicity level which would only be prevalent in the immediate area of an incident. It is highly flammable and harmful by inhalation and irritant to the eyes. • It has a moderately high volatility, giving noxious fumes which are of moderate toxicity, moderate irritant. It undergoes rapid photo-oxidation in air, has a moderate to low soil adsorption coefficient, and so has low persistence level and low bio-accumulation level. • Toluene is moderately soluble in water (535 mg l^{-1} at ambient conditions), and these levels of contamination and below may affect the taste or odour of water. It has moderate to high eco-toxicity to fish, shrimp and mammalian life.
7	*What were the environmental impacts of the combustion products and contaminated fire-fighting foam runoff on water, land and air in the short term and long term? Consider the dose received and the sensitivity of the receptor.* **a. Air Pollution** It is highly flammable and when burning, produces a high level of carbon deposits (soot), as well as carbon dioxide and water. Fall out from the flames and smoke would be soot, and is unlikely to cause any irritation. It should be treated as dirt and washed off. **b. Water Pollution** Small localised fires were caused by ignited toluene leaking in to the road drains. These were extinguished using water and a minimal amount of foam. Water run off from cooling was allowed to enter drains. The road at that point is close to the Stainsby beck and it was examined at the Mandale road junction, but no evidence of pollution was found. Further inspection of the beck after the fire had been extinguished using firefighting foam was conducted, as some of the foam had entered road gullies. No further pollution was found, and this was attributed to the higher than normal water level of the beck at the time of the incident diluting out any pollutants.

	c. Land Contamination 300m^2 of road surface was contaminated with toluene. The incident occurring on the central reservation limited the land contamination.
8	*Is the environmental impact assessment based on hard data and robust assessments of impact or just subjective opinion and gut feeling?* Questions 7b was answered based on the report by the Northumbrian Water Authority Pollution Prevention Department from Mike Riby of the Environment Agency in Barnaby.
9	*What was the effect on people physically? e.g. injury, mortality, morbidity* Only two people sustained injuries from the incident. The tanker driver had a bruised back and minor burn to the hand, and was kept in for observation overnight, and the driver of the original vehicle which crossed the central reservation and cause the tanker to swerve had a cut to the hand.
10	*What was the effect on people emotionally? e.g. adverse publicity, hostility from local community.* Two major problems were caused by taking the decision to allow the toluene tanker to continue to burn. • The first was the considerable amount of heavy smoke given off in the burning hydrocarbon which caused some concern, albeit unfounded, to nearby residents (nearest housing 750-1000m). Cleveland was also subject to extensive news reports (newspapers, radio, and television), about the toxicity and danger of the smoke, which was also unfounded, despite press releases from local authorities and the Chief Fire Officer. • The second was the considerable disruption to traffic by the closing the main arterial road through the county for 12 hours, while the subsidiary fires were extinguished, the toluene burned off to a safe level, and the clean up of the situation afterwards. The road remained closed for a further day, due to damage sustained in the fire. "toluene - a constituent of the explosive TNT" "Middlesborough became a virtual siege town as householders and town centre staff were warned to keep windows closed, and stay inside." "As the chemical was allowed to burn off, creating a massive cloud of acrid, black smoke, warnings were broadcast telling people to stay indoors. Schools and hospitals were notified and road blocks were set up."
11	*What was the financial impact (refer to cost-data collection sheet)? Attitude of Operator and insurers?* • Overall, fire damage occurred to 5 cars, 4 of which were severe and the road tanker, which was destroyed. 300m^2 of the tarmac road surface was affected by heat and toluene. • 20m of roadside furniture was severely damaged by the heat. • 3000 gallons of toluene was destroyed, and the remaining 1800 gallons was contaminated by foam compound and water. • Fire service costs included 67 firefighters (14 Station Officer rank or above), 10 major pumping appliances, 1 decontamination unit, 1 emergency tender and 1 foam tender, which were tied up for 12 hours.
12	*What were the legal implications?*
13	*With hindsight, was the chosen option (put out or controlled burn) the BPEO?* The incident was both a controlled burn and a put out, depending on the demands of the situation. A controlled burn was excised until the level of the toluene in the tanker was below that of the ruptured manlids. This reduced the possible amount of contamination to the surrounding area through spillage, and was deemed the safest option. Once the level of toluene was sufficiently low, the fire was extinguished. The remaining toluene was then removed from the site of the incident. Overall, this was the safest combination of events to occur for the environment, with negligible pollution aspects to the surrounding area and water, although the public (especially commuters) were more inconvenienced by this course of action.

14	*What was the balance of protecting the environment versus the other important physical, legal, financial/ insurance impacts?*
15	*Additional notes:* "One disappointing feature of the incident was the way in which some other services and organisations reacted and instituted certain emergency procedures without making any reference to, or seeking information from, the fire officer in charge of the incident." Designated routes for goods vehicles making journeys of any length, especially for hazardous substances, are now used in Cleveland since the early 1990's after the incident. These make use of dual carriageways and other major roads, minimising residential and commercial areas. They take into account various road hazards, such as steep hills and sharp bends, and they permit easy access for the emergency services, should an incident occur.

All of the questions were answered (except 7b and 8) using reports, articles and news items supplied by ADO Dale from Cleveland County Fire Brigade.

The Environmental Heath Office in Stockton, which was involved in the water pollution monitoring from the incident were unable to find a record of the incident that occurred so long ago (13 years).

PART IV LEGAL OPINION

4.1 Letter from Trowers & Hamlins Solicitors

TROWERS & HAMLINS

Our ref ADW.
Direct Dial 020 7423 8340
E-mail aswiseman@trowers.com
Your ref
Date 24 November 2000

Sceptre Court
40 Tower Hill
London EC3N 4DX
DX 774 Lon/City
Telephone 020 7423 8000
Fax 020 7423 8001

Stanger Science & Environment
Gt. Guildford House
30 St. Guildford Street
London
SE1 0ES

LEGAL ASPECTS OF CONTROLLED BURN
LEGAL OPINION

Introduction

This opinion is confined to the question of the relationship between the Fire Services Act 1947 (note that this is the correct title of the Act) on the one hand, and the Water Resources Act 1991 and the Environmental Protection Act 1990 on the other. This opinion does not constitute legal advice. Pending a decision by a court, this is an issue where legal opinion may legitimately differ.

The Fire Services Act 1947

In our opinion, the 1947 Act does not impose an overriding duty on fire authorities to put out fires, or to protect property.

S. 1 of the Act places a duty on fire authorities to make provision for "fire-fighting purposes" (meaning "the extinction of fires and the protection of life and property in case of fire"), and s. 13 places a duty on fire authorities to take all reasonable measures to provide an adequate supply of water in case of fire. Under s. 30 (3) the senior fire brigade officer present at the scene of a fire has sole charge of operations for the extinction of the fire. There are no further provisions in the Act as to how the fire authority is to carry out fire fighting operations.

In *Capital Counties plc v Hampshire CC* (1997 QB 1004 at 1030A) the Court of Appeal held that the 1947 Act impliedly gives fire authorities the power to fight fires, but does not fix them with a duty to do so. The *Capital Counties* case suggests strongly that in the absence of a positive negligent act by fire personnel (such as negligently turning off a sprinkler system), there will be no liability on the part of the fire authority to persons suffering loss as a result of fire-fighting operations, or failure to carry out fire-fighting operations. In particular, it was held that s.13 of the 1947 Act does not establish a right of action where fire authorities fail to provide an adequate supply of water.

Strictly speaking, the judgment in the *Capital Counties* case concerns only the liability of fire authorities to third parties, rather than the proper interpretation of fire authorities' public law duties. Nevertheless, the Court of Appeal's judgment is persuasive when it comes to interpreting public law duties.

As noted in the draft report, risk assessments procedures based on safety of fire personnel exist alongside the 1947 Act, apparently without difficulty. It is suggested that a court would be unlikely to find that a properly reasoned decision not to carry out fire-fighting operations on the grounds that such operations would create an unacceptable health and safety or environmental risk, was either unreasonable in public law terms, or would create a right of action on the part of a person whose property was damaged as a result of such a decision.

Water Resources Act 1991

A fire authority which, in extinguishing a fire, caused contaminants to enter "controlled waters" (the term is wide enough to cover most waters) could in theory be liable of an offence under s. 85 (1). S. 85 (1) establishes a strict liability offence, so an authority could be guilty of the offence even if it did not know that its actions would cause water pollution. This is a matter of criminal law (a person found guilty of the offence is liable to a fine or imprisonment) rather than public law duty.

It is a defence to a s. 85 offence if the entry of the matter into controlled waters comes about "in an emergency in order to avoid danger to life or health", provided the person takes all reasonable steps to minimise the extent of the water pollution, and the Environment Agency is informed of the water pollution (s. 89 (1) of the 1991 Act). Therefore, a fire authority would have a defence to a s.85 charge where its fire-fighting operations caused water pollution, if the operations were directed at avoiding danger to *life or health* (so long as reasonable steps were taken to minimise water pollution). On the other hand, where fire-fighting operations directed only to the protection of *property* cause water pollution, the authority would not have a defence.

In addition, where a fire authority causes water pollution in the course of extinguishing a fire, and works are required to rectify the water pollution, the fire authority could be liable to carry out remediation under the powers in s. 161A of the 1991 Act (or in certain circumstances, to meet the cost of remediation works carried out by the Environment Agency under s. 161). This is a civil, regulatory liability (though failure to carry out the regulator's instructions is a criminal offence). The defences available to the s. 85 criminal offence would not be available for the s.161A liability. This means that the reason for the water pollution is, strictly speaking, irrelevant, as far as the clean-up provisions are concerned.

These liabilities under the 1991 Act will in practice only arise if the Environment Agency decides to prosecute or take regulatory action. On the basis of the Agency's published prosecution policy (which notes the importance of intent in deciding when to prosecute) it is unlikely that a prosecution would be launched against a fire authority which had caused water pollution in the course of reasonable fire-fighting operations.

Environmental Protection Act 1990

In addition to the liability for the clean up of water pollution, there is a theoretical liability under the new Part IIA of the 1990 Act for a fire authority which causes land to be "contaminated land" (this is a defined term under Part IIA) in extinguishing a fire. The fire authority would be liable to carry out remediation works so that the land is no longer in a contaminated state, or, in certain circumstances, to pay for remediation carried out by the regulatory authority (which in this context is either the Environment Agency or the local authority).

Conclusion

In our opinion, there is no overriding duty under the 1947 Act to extinguish fires, nor is there is an overriding duty to protect property. Therefore, a decision whether or not to carry out fire-fighting operations would be governed by general principles of public law reasonableness (and by any applicable Guidance). It is not hard to imagine circumstances where it would be reasonable for a fire officer to decide not to carry out fire-fighting operations because the consequences of carrying out the operations (whether these be environmental or some other consequences) would be worse than the destruction of property caused by failing to carry them out.

Under the 1990 and 1991 Acts fire authorities may incur criminal or civil liability as a result of fire-fighting operations which cause the release of polluting materials into the environment. The issue here is not so much a conflict or inconsistency with the 1947 Act, but rather that legitimate fire-fighting operations are capable of creating criminal and regulatory liabilities under the 1990 and 1991 Acts. These liabilities would theoretically arise even where the consequences of failing to carry out the operations were severe, and the environmental consequences of carrying them out minor.

In practice, it is suggested that the environmental enforcing authorities are unlikely to exercise their discretion to pursue fire authorities in such a case. Indeed, to do so would probably be an unreasonable use of their discretion.

It is important that any guidance that is issued emphasises the position to the Fire Authorities. Any fire fighting officer is likely to need reassurance that they will not is prosecuted for committing an environmental offence and they will not have civil liability to the owner of the property.

Trowers & Hamlins
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