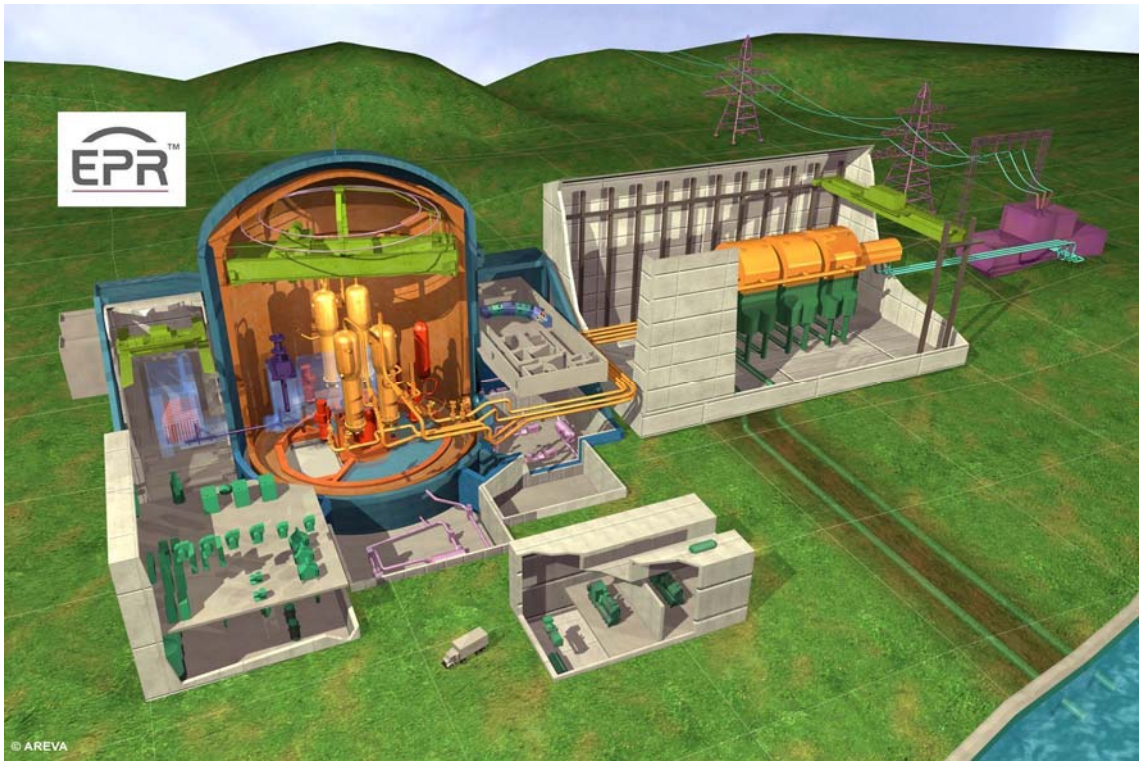
Generic design assessment of new nuclear power plant designs

Summary report of responses to the consultation on the detailed assessment of the submission by:

AREVA NP SAS and Electricité
de France SA for their
UK EPR design



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1 Introduction

1.1 About this document

1 This report summarise responses to the Environment Agency's consultation following the publishing of "Generic design assessment of new nuclear power plant designs: Consultation document following detailed assessment of the submission by: AREVA NP SAS and Electricité de France SA for their UK EPR design."

2 The consultation ran from 28 June 2010 to 18 October 2010.

3 A list of the questions we asked is included Chapter 2 of this document.

4 Chapter 3 summarises the responses we received against the questions we asked. It does not analyse or comment on the responses, which will be in our Decision Document (see "What happens next", below). Other comments and questions were also raised at our seminar held on 6 July 2010 in Birmingham and these are recorded in the report of that day, which is available on the joint regulators website – see http://www.hse.gov.uk/newreactors/seminar-060710.pdf.

5 Some responses were very full and comprehensive. We have endeavoured to summarise the key points in this document, but the full responses are all available on our consultation website at https://consult.environment-agency.gov.uk/portal/ho/nuclear/gda. Alternatively, copies of specific responses may also be requested from the following:

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6 A list of respondents is contained Annex 2.

1.2 What happens next?

7 We are considering carefully all the responses we received. If issues have arisen that fall outside our responsibilities, we have passed them to the appropriate Government department or public body.

8 Comments received, where relevant to the scope of our assessment, will help us decide whether or not to issue a statement of design acceptability for the UK EPR. We will publish a document that:

a) sets out our decision;

b) summarises the consultation responses and issues raised;

c) sets out our views on those issues.

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1 Approximate calls costs: 8p plus 6p per minute (standard landline). Please note charges will vary across telephone providers.

9 We expect to do this by June 2011. We will summarise our progress with HSE in our quarterly reports, which we will continue to place on our joint website (www.hse.gov.uk/newreactors). Regular updates will also be provided via our e bulletin (www.hse.gov.uk/newreactors/ebulletin.htm).

10 Our final decision will be available at www.environment-agency.gov.uk

1.3 Consultation Code of Practice

11 We are running this consultation in accordance with the criteria set out in the Government's Code of Practice on Consultation (see Annex 1).

12 If you have any queries or complaints about the way this consultation has been carried out, please contact:

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2 Consultation questions

13 Below is a list of questions that we asked for responses to as part of this consultation on the UK EPR design:

14 Do you have any views or comments on our preliminary conclusions on:

1. management systems?
2. the radioactive waste and spent fuel strategy?
3. best available techniques to minimise the production of radioactive waste?

4a. best available techniques to minimise the gaseous discharge of radioactive waste?

4b. our proposed annual disposal limits?

4c. our proposed gaseous quarterly notification levels?

5a. best available techniques to minimise the aqueous discharge of radioactive waste?

5b. our proposed annual disposal limits?

5c. our proposed aqueous quarterly notification levels?

6. solid radioactive waste?
7. spent fuel?
8. monitoring of disposals of radioactive waste?
9. the impact of radioactive discharges?
10. the abstraction of water?
11. discharges of non-radioactive substances to water?
12. pollution prevention for non-radioactive substances?
13. Environmental Permitting Regulations 2010 (EPR 10) Schedule 1 activities?
14. non-radioactive waste?
15. Control of Major Accident Hazards (COMAH) substances?
16. the acceptability of the design?
17. Do you have any overall views or comments to make on our assessment, not covered by previous questions?

3 Responses to the consultation questions

3.1 Management systems (Qn 1)

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I accept the value of your preliminary conclusions.
GDA38	Ingleby Barwick Town Council	Checks need to be made following design modifications. Problems must not slip through the safety net. Support must be given to contractors who will run the reactor, mechanism needed to respond to audits. System needed for spreading information to all involved in design, construction and initial start up and throughout reactor life. Training programme required.
GDA51	Maldon Town Council	AP1000 we note that some matters still outstanding. UK EPR we note that AREVA EDF have demonstrated that they understand the requirements, but not convinced that they can be put into place due to 2 companies involved.
GDA56	Member of Public	I do not like any nuclear power station design...its short sighted thinking. Radioactive waste is still produced.
GDA66	Member of Public	In France ASN requires the PWRs to be dismantled and internally inspected every 10 years, This takes 3 months off-line. Will a similar routine apply to the UK EPRs?
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The conclusions on AREVA/EDF management and information exchange systems appear robust and relevant.

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
GDA76	Health & Safety Executive, Nuclear Directorate	Questions 1-9 all relate to the Environment Agency's regulation of the disposal and discharge of radioactive wastes from an EPR site. HSE's Nuclear Directorate is responsible for the regulation of on-site management of radioactive materials and there is thus a degree of common regulatory interest with regard to these matters. The close working relationship between the Nuclear Directorate (ND) and the Environment Agency means that we are familiar with the Agency's findings and areas of regulatory overlap have been the subject of discussion between our respective assessment teams. We therefore offer no comments in relation to these specific questions. However, our assessment work on the EPR generic design is continuing across all technical areas, and we cannot discount the possibility that issues may arise in relation to areas of common interest where ND and the Environment Agency may have differing views. Any such differences of opinion would be handled routinely as they arise as part of our established methods of joint working.
GDA84	Member of Public	Happy with the response. Clearly the two companies have a unique combination of complementary expertise and have taken all the preliminary comment on board.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 1.
GDA96	Springfields Site Stakeholder Group	In basic agreement with the preliminary conclusions for both designs, assuming that effective interactions continue between the Vendors, Utilities and regulators to maintain and improve standards.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion at this point in the Generic Design Assessment (GDA) process that appropriate arrangements are in place for management of the design of the UK EPR and transfer of knowledge to its owner/operator. As prospective owner/operator within the EDF Group of nuclear facilities using the UK EPR design, NNB Generation Company Ltd (NNB GenCo) has initiated and will continue to develop management arrangements that are in accord with all regulatory requirements and fit for purpose for a competent nuclear operator. In developing these arrangements, NNB GenCo will be able to take advantage of accumulated experience within the EDF Group of operating 58 nuclear power plants in France and 8 nuclear power stations in the UK.
GDA123	L2 Business Consulting	What Standard is each management system based on, this is not stated in your report. Have the management systems been 3rd party assessed by a recognised accreditation body. What will the final operational management system be based on - will it be the same as used for the GDA process. How will the operating company's culture be conveyed i.e. French and American into British?

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
GDA125	Greater Manchester Socialist Environment Resources Association (SERA)	EDF AREVA is a multi-national company based in France with business elsewhere in the world. They have at present a solid financial backing from the government in France, but their business is by no means stable in the current turbulent economic climate. Their loyalty is to their shareholders and to the French Government and this may result in reduction of critical funding for safety features and communications in the future. As transport of new nuclear materials and resultant high burn waste will affect all communities in the UK, we see no evidence of assurance of proper accountability for their business to the people of Britain in this generation, or in the future generations who will have to bear the brunt of decommissioning and of any accident or terrorist attack. SERA is not satisfied that EDF AREVA have taken account of the changing workforce implications between those who design and build the proposed new design reactors and those in the utility companies who may be commissioned to run them. The time scale for new build will see changes in the make up of the available workforce, and although the diagrams given in the response look very simple (eg 4.1 on page 104), there are likely to be complexities where the transfer of knowledge has been hampered by issues of commercial confidentiality. The operating utility companies may have too great a gap in their operating instructions to be able to run the plant safely. This potential for knowledge gaps needs to be covered. There will also be language and interpretation issues for future generations.
GDA126	Sellafield Ltd	No comments
GDA127	Horizon Nuclear Power	Horizon agrees that the Environment Agency (EA) has been rigorous in reviewing EDF and AREVA's management systems. We agree with the high expectations identified by the EA for EDF and AREVA's management systems. For utilities other than EDF, AREVA alone will be responsible for providing the UK EPR for site specific projects. Post Generic Design Assessment (GDA), as overall control will be the responsibility of the future licensee, delivery of AREVA's management arrangements will be under the supervision of, and in accordance with, any future plant operator's management systems. We acknowledge that the process of knowledge transfer from AREVA to Horizon has already started as described in the consultation document. Horizon Nuclear Power (Horizon) is able to draw on the expertise and knowledge of E.ON KernKraft and RWE Power (the subsidiary companies of our parent companies E.ON AG and RWE AG respectively), who were both involved in the EPR basic design phase and have expert knowledge of the European Utility Requirements.

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
GDA145	Institute of Mechanical Engineers	Notwithstanding that the Generic Design Assessment is for a single reactor power station, the Institution considers the assessment document should include a statement regarding the suitability of the management systems proposed for twin reactor stations. - The Institution considers that EDF and AREVA as co-applicant requesting parties with EDF as a potential operator should be a benefit to the transfer of design information and establishment of the learning organisation. - We are content that AREVA and EDF have set out sufficient & well proven management systems to provide quality control during the design phase with well-established plans to transfer the knowledge from vendor to operator during the plant handover stage.
GDA154	West Somerset Council and Sedgemoor District Council	In preliminary conclusions, the Environment Agency consider 'that AREVA and EDF have demonstrated that they understand the requirement to establish arrangements to maintain design integrity, and to preserve the necessary detailed and specialised knowledge generated over the plant's operational life for the UK EPR'. While we have no fundamental observations with regards to this conclusion, we consider it important, especially for those in the locality of proposed nuclear power stations, that the scrutiny, and maintenance of quality, of management systems employed is a 'beginning to end' activity which must extend over many decades. Ongoing scrutiny of these systems by the Environment Agency must be demonstrably effective, and any issues that arise must be transparently communicated to local government bodies to provide confidence in the continued effectiveness of management systems during construction, operation and in due course decommissioning of sites
GDA157	Stop Hinkley	The respondent provided a detailed document, available to see on our website, we include below and at other relevant questions some extracts, footnotes have had to be deleted to meet the format of this document: We are concerned about reports relating to EdF's management processes both in France and in the UK, with particular regard to ensuring the safe containment of radio-isotopes. The EdF operated Tricastin plant two years ago was found to have contaminated one hundred workers. Two other plants were also found to have leaked radiation into the environment and industrial unrest has ensued with EdF needing to settle higher than expected (4.4% on average) salary scales for its nuclear workers. The recently EdF acquired plant at Hinkley B was also where eight workers were contaminated two years ago, needing to be sent directly to Harwell for more detailed analysis of their contamination.

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
		In EdF's summary document, "Preferred Proposals: Explanation and Assessment, July 2010", the company says that the operation of the power station will be "undertaken in a manner consistent with the highest standard of safety, reliability and sustainability" (para 1.1.7). However, EdF's track record on these measures is poor. Professor Stephen Thomas from Greenwich University, for example, has said that the company's reliability is worse than comparative operators in the rest of Europe and the United States. Last year France was in the humiliating position of having to import electricity from other countries as 30 per cent of its nuclear plant was under repair or closed because of industrial disputes. The safety of EdF nuclear has been under considerable media scrutiny, especially during 2008, when 100 workers were contaminated by a leak at the Tricastin power station. The incident was taken so seriously by the local vineyard that it decided to change its "appelation" to avoid association with radioactivity. The operation of other EdF plants has also resulted in radioactive leaks. Under the newly acquired ownership of EdF, Hinkley Point B was the focus when eight workers were sufficiently contaminated for them to be sent to the scientific laboratory at Harwell for further investigation. No doubt the worker and environmental safety at EdF plants contributed to the industrial unrest last year, which forced the management to raise salaries by 4.4 per cent. EdF internal documents submitted to the French campaign group Sortir du Nucleaire appear to show that safety has been compromised in the ongoing construction of an EPR at Flamanville. A combination of design problems and engineering methods are said to potentially lead to a Chernobyl type explosion. In short, we are not convinced by the safety claims made by EdF. Although the risks from an accident at a future EPR power station might be remote, the consequences would be unthinkable. In this respect, if a license is eventually given for the power station, we would like to see the implementation of a wide-scale programme of pre-distribution of potassium iodate tablets. We consider the existing radius of 3.4 kilometres for example at Hinkley Point, to be inadequate in the event of a serious accident. Fifty miles would be more appropriate, especially given the intense radioactivity of the high-burn fuel. One report suggests that seven times more radioactive iodine, and eleven times more caesium, would be blown out of the reactor in a serious accident than from a standard PWR. As the *Guardian* newspaper reported in 2008: "The problems inside France's nuclear industry could not come at a worse time for Britain. They may be officially 'anomalies', as some say, but they raise questions about the safety and efficiency of the two giants Electricite de France (EDF) and Areva, entirely or largely state-owned."

ID	Member of Public / Company / Organisation	Question 1 - Do you have any views or comments on our preliminary conclusions on management systems?
GDA166	Cumbria County Council	That separate reports about Areva/EdF intention to ‘optimise' EPR construction in the UK in the light of experience at Olkiluoto, Finland and Flamanville, France, suggests the EPR design information assessed by the joint regulators could be subject to change. The EA is asked to explain how the joint regulators plan to manage the continuing generic assessment process for an evolving reactor design.

3.2 Radioactive waste and spent fuel strategy (Qn 2)

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I am satisfied with your conclusions.
GDA38	Ingleby Barwick Town Council	Each site must be built within 'microscopic detail' as each site will be different. Waste management is a major issue and must be given priority as it is an emotive subject for the general public. Firm assurances must be given!!
GDA51	Maldon Town Council	Waste strategy not up to spec of Magnox South, e.g., at Bradwell decommissioning standard. Spent Fuel strategy ok for storing in the Pool but not sure on strategy of dry spent fuel. UK EPR we note also that EDF AREVA claim their IWS(Intermediate Waste Strategy) that there is a management strategy for all waste streams for their plant; but they seem to want to get rid of it ASAP. What about transporting this waste, not mentioned, only claim it in their strategy?
GDA60	Swedish NGO Office for Nuclear Waste Review, MKG	I strongly question the new-build of nuclear reactors without having a final solution available for the disposal of the spent nuclear fuel. The NDA appears to try to build some confidence on the possible use of the Swedish/Finnish KBS method in the UK. However, the KBS method, that relies on artificial barriers of copper and clay for long-term safety, is under severe scientific criticism and it is uncertain whether the method will survive the licensing process in Sweden that is to start next year. It appears very unsound to proceed with new build without any other spent fuel strategy than long-term intermediate storage. This mistake has already been done in the 20th century and should not be repeated. Has nothing been learnt from history?
GDA56	Member of Public	I do not like any nuclear power station design...its short sighted thinking. Radioactive waste is still produced.
GDA66	Member of Public	The transfer of the spent fuel from the pond after 10 years to dry casks is the only acceptable system. The US open-air "cemetery" is preferred over the Sizewell B (also in Switzerland and Belgium) solution of a "mausoleum"
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The conclusions on radioactive waste management and spent fuel management strategies are well founded, particularly noting their consistency with formal UK positions. The reservation on decommissioning the EPR is understandable and the requirement to provide further information on specific rather than reference case information at site specific permitting is noted.

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
GDA72	Suffolk County Council	Suffolk County Council agrees with the comments made by Local Government Association's Nuclear Legacy Advisory Forum that: the EA has potentially taken an overly optimistic view of the risks and uncertainties inherent in the implementation of Government policy for Low Level Waste management. It is arguable that in the light of the uncertainties, the buffer storage capacity at each station should be considerably longer than one year's operation; the GDA process should explicitly address the implications of the potential scenarios for the interim management of spent fuel should the Geological Disposal Facility not come forward on the expected timetable. Furthermore Resolution Plans to provide further evidence on a number of issues arising from the EPR waste strategy should be published when concluded.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA82	Nuclear-Free Local Authorities	The Nuclear-Free Local Authorities (NFLA) fears that the communities that host a new reactor site could easily end up becoming a dump site into the indefinite future - since there is no known safe method for ˜disposing' of nuclear wastes. On top of this there would be risks associated with waste handling facilities and as yet unknown risks along potential transport routes. Full response at: http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf
GDA84	Member of Public	This is fine.
GDA88	Health Protection Agency	The consultation document should make it clear in its conclusions that the AREVA/EDF's 'reference case', Flamanville 3, is still under construction and will not be operational for at least 2 years and therefore cannot provide evidence of actual waste arisings. When assessing the design of the interim storage facilities for spent fuel it is important that due consideration is given to minimising any waste arising from refurbishment and any doses to workers or members of the public likely to be received during refurbishment or routine operation. It is not clear from the consultation document whether this has been done for the GDA.
GDA96	Springfields Site Stakeholder Group	In agreement with the preliminary conclusions for both designs, assuming that they are consistent with Waste Hierarchy principles.
GDA102	Waldringfield Parish Council	The sections on the storage of radioactive waste (7.1) and spent fuel (7.2) make no mention of security measures to prevent terrorists or other organised criminals from attacking the on-site storage facilities, resulting in the release of the material into the environment, widespread radioactive pollution and large

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		scale evacuations from the surrounding areas. Similarly, nothing is said about measures to prevent terrorists stealing this radioactive material, with a view to using it in a ˜dirty bomb'.
GDA105	Forum 21	Re para 161 "manage unavoidable waste and spent fuel to achieve an optimal level of protection for people and the environment." We question whether this is sufficient expectation. "Optimal" may not necessarily be safe for people or protect essential environmental attributes. We question whether EDF has undertaken sufficient research and modelling to demonstrate an optimal level of protection for people and the environment. This is for the reasons stated below. The assumption accepted is that ILW and spent fuel may be on the site for up to 160 years from first operating date i.e. to c.2180. Our understanding is that UK Climate Projections have made no projections for sea level rise and increased storm surge risk in the Bristol Channel beyond 2100. The worst case projections diverge from the mean projection significantly at the later time periods as uncertainty of emissions and system response increases; this divergence is likely to increase significantly beyond the currently modelled period. Given the potentially catastrophic human and environmental implications of any significant leak of ILW or spent fuel radioactivity, the onus must be to demonstrate beyond reasonable doubt the ability of the power station and waste storage facilities to withstand the worse case conditions that can be projected. There is no evidence that this risk has been researched, far less demonstrated to be entirely safe.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that Intermediate Level Waste (ILW) and spent fuel from a fleet of UK EPRs would be disposable in a suitably designed and located UK Geological Disposal Facility (GDF)), subject to a satisfactory demonstration that spent fuel can be stored safely for the necessary period of time without significant degradation. This is in accord with the evidence provided by the Requesting Parties. Outside of the GDA process, prospective operators including NNB GenCo are already working with the Radioactive Waste Management Directorate (RWMD) to progress key issues, including the duration of interim storage prior to emplacement and the optimisation of the GDF design for both legacy and new build waste. These are operator and site specific issues, and we do not believe it is appropriate for the Requesting Party to seek further commitments from RWMD as part of the GDA process beyond the disposability assessment that has already been provided. We recognise that prospective operators will need to continue to work closely with regulators and RWMD as the design of the GDF develops, so as to ensure that conceptual Letters of Compliance are in place at the appropriate time.
GDA119	Member of Public	The respondent provided a detailed response that can be seen on our website and raises a number of issues, for example : '*It is highly likely a waste repository will never be build. The stores should be designed to fulfil all the requirements on the assumption the High Level Waste/Spent Fuel will be on site*

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		permanently. To my mind, it is mere political expediency to say otherwise and I would deem it irresponsible to go forward under that speculation'. Some comments were on the scope of GDA and that safety and security were not covered.
GDA126	Sellafield Ltd	The conclusions are well thought out and proportionate and Sellafield Ltd would support them.
GDA127	Horizon Nuclear Power	Horizon welcomes and supports the EA's conclusion that AREVA and EDF have provided a reasonable radioactive waste and spent fuel management strategy and that this is consistent with recent government statements and with the EA's Radioactive Substances Regulation Environmental Principles (REPs). We appreciate that the EA's conclusions on decommissioning in the consultation document are focussed on the design of the EPR and it is right and proper that AREVA and EDF should respond to this aspect since this is under their full control. However, we are also aware that the EA has requested information from AREVA and EDF about decommissioning that goes beyond the reactor design and impinges on the operational issues associated with decommissioning. We believe it is important to draw the distinction between generic, site specific and operational issues and that each of these should be considered at the appropriate stage of the relevant licensing and permitting processes during the lifetime of the project. We note that decommissioning of the AP1000 has been identified as a potential GDA Issue. E.ON KernKraft and RWE Power (the subsidiary companies of our parent companies E.ON AG and RWE AG respectively) are currently undertaking several large-scale reactor decommissioning projects in Germany. Their experience shows that decommissioning of a PWR is actually more of a management than a technical challenge. Providing that good housekeeping is maintained during operations, experience shows that it will be possible to undertake decommissioning in an efficient and effective manner. We would hope that the EA's continuing work will conclude that decommissioning is not a GDA Issue. All of the technologies required to perform decommissioning of modern PWRs in a safe, reliable and efficient manner are available today and are being deployed in active decommissioning projects. Good design of modern PWRs will make decommissioning easier and it is appropriate that reactor vendors expend considerable resources to ensure that reactors built to their designs can be efficiently and effectively decommissioned. Experience in Germany has demonstrated that the key to a successful decommissioning project is for the operator to plan carefully the logistics of how the available technologies are deployed in practice. Whilst the detailed design of the PWR itself can aid decommissioning, it is not necessarily the primary contributor to a successful project.
GDA133	Nuclear Waste Advisory Associates	The respondent provided a document, that can be seen on our website , raising many issues regarding long term waste management. The document's conclusions can be seen at question 17.
GDA135	Member of Public	Yes. The conclusions drawn rest on the assumption that geological disposal of ILW and spent nuclear

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		fuel is technically achievable. This is at best speculative and not supported by the available evidence. For further information see: Wallace HM (2010) Rock Solid? On: http://www.greenpeace.org/raw/content/eu-unit/press-centre/reports/rock-solid-a-scientific-review.pdf Further, the Nirex inquiry concluded that West Cumbria is not suitable for geological disposal: " The indications are, in my judgement, still overwhelmingly that this site is not suitable for the proposed repository, and that investigations should now be moved to one of the more promising sites elsewhere ". Inspector's report, para 8.53, available on: http://westcumbriamrws.org.uk/#/external-docs/4540226211 The relevant geological and hydrogeological problems, e.g. upward groundwater flow through the proposed repository zone, geological complexity, apply to the whole of West Cumbria, not just the Longlands Farm site then being considered for the siting of a deep underground repository for ILW. No local authorities outside West Cumbria have expressed an interest in hosting a deep geological repository. Further, concerns expressed by the Irish Government at the Nirex Inquiry about radioactive discharges into the Irish Sea from an on-land repository in West Cumbria have not been considered or addressed. The alternative of a sub-seabed repository would not be safe, acceptable, or lawful. It follows that there is no publicly acceptable, safe option for the disposal of the ILW or spent nuclear fuel expected to be generated by either of the proposed reactor designs. Deep disposal will either: (i) not take place, leaving future generations to manage the waste indefinitely, or: (ii) impose undue burdens on future generations due to the leaking of radioactive groundwater and/or gas. The Environment Agency has a statutory duty to consider the impacts of ILW and spent nuclear fuel on future generations and to meet legal obligations in respect of sustainable development. It cannot rely on unsubstantiated assertions made by third parties in this respect. It should therefore reject both applications.
GDA145	Institute of Mechanical Engineers	• The Institution supports the principle of 'Concentrate and Contain' as the preferred process for the radioactive waste strategy. • The Institution suggests further options for the final disposal spent fuel(e.g. surface entombment and near surface disposal in overseas dry rock strata) should be considered in addition to the Geological Deep Facility. • We agree that EDF and AREVA have provided a reasonable radioactive waste strategy for all waste streams that a UK EPR will typically produce, including spent fuel, however have some details comments in some areas. • Whilst the Institution agrees that a high level Decommissioning Strategy is required at this stage and design features to aid decommissioning must be considered and implemented, it is unreasonable to

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		expect too much detail at this stage. As the operating life of the station will be 60 years much experience will be gained and new techniques will emerge during this period. • The Institution acknowledges that the SRWSR states that the UK EPR design will enable decommissioning to be performed to minimise radiation doses to the workers and minimise radioactive waste generation. The SRWSR also discusses the several features that have been incorporated into the design to aid decommissioning. We await further clarifications as required by the EA during step 4 of the GDA and during the site specific submission to the Regulators.
GDA154	West Somerset Council and Sedgemoor District Council	The Environment Agency recognise that the current Integrated Waste Strategy provided by EDF and AREVA is a generic 'reference case' for the site specific strategy, which will need to address site-specific issues. Paragraph 168 reports that EDF and AREVA state that solid radioactive waste will be optimised and disposed of 'as soon as practicable where an appropriate disposal route is available'. It further reports that low level waste (LLW) will be disposed to the low level waste repository (LLWR) and intermediate level waste (ILW) will be stored on site prior to disposal to a geological disposal facility (GDF). Spent fuel will also be stored on site prior to removal to GDF when appropriate. While we note that this reference case is consistent with recent Government statements, the authorities remain concerned at the need to take further account of the potential risks associated with delay and delivery of the GDF programme. Should the GDF programme be delayed, this runs the risk of continued need for on-site ILW and spent fuel stores until an ultimate disposal route is finally established. Consideration needs to be afforded to the need for contingency plans to be secured, to provide confidence to local communities, either that on-site storage of ILW and spent fuel would be safe and secure until ultimate GDF delivery, or that feasible alternatives for centralised optimisation and storage of waste, may be practicable. The longevity of spent fuel storage at reactor sites is clearly of great concern to potentially affected localities. The Environment Agency should further ensure that plans and contingency plans are regularly updated, and any potential problems and/or proposed changes consulted upon early and effectively. The potential challenges associated with LLW are perhaps more acute, as there is currently limited capacity in the national LLWR near Drigg in Cumbria. The availability of more LLW and VLLW disposal capacity both at the LLWR and at alternative sites is subject to uncertainty. EDF has currently planned for one year LLW buffer storage at the site (para. 455). There is the clear potential to require more capacity than this, and again Environment Agency should require that contingency plans are adopted, updated regularly, and consulted upon in the locality to ensure that on-site storage of LLW remains safe and secure and does not create a long-term liability to affected communities.

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		We are also mindful that specific proposals for spent fuel storage allow for at least 100 years after the first spent fuel is emplaced in the store (para. 175). This, however, suggests a deviation from the approach adopted by the Government's draft National Policy Statement on Nuclear Power, which considers the need for onsite storage of spent fuel for at least 100 years. With an operational lifetime anticipated at 60 years, it is therefore reasonable to conclude that onsite storage of fuel may be required for a period of 160 years
GDA157	Stop Hinkley	In the consultation document the EA refers to "interim spent fuel storage facilities". "Interim" in fact means storing 3,600 tonnes of spent (used) nuclear fuel for a period estimated to be 100 years after the reactors have stopped operating. This means for more than 160 years from now. "Spent fuel" is the technical description for fuel whose energy has been extracted in the reactor, but in reality it is radioactive waste. The consultation repeatedly refers to the 100 year timescale which is misleading. The result is that Hinkley Point or other EPR sites will have a long term radioactive waste store in addition to a nuclear power station. There is also an alarming suggestion in paragraph 178 of the consultation that a spent fuel store might be shared between several sites. This would mean the unacceptable transportation of highly radioactive fuel by rail or road, passing through communities. This transforms the consultation into something quite different from deciding on an electricity generating plant. Apart from the obvious risks associated with a waste store (breach of containment, aircraft crash, flooding, terrorism, climatic changes over such a long timescale) there is still no certainty that this waste will be removed to a permanent repository. No mention is made in the consultation about the staggeringly high level of radiation in the EPR spent fuel which is due to its 'high burn up' nature in the reactor. At 6,000 MWd/tU the fuel will be twice as hot and twice as radioactive as from a standard PWR such as Sizewell and is the reason that the spent fuel must be cared for for such a long period. Discussions have been taking place since the 1980s about such an underground repository, which is fraught with technical issues, even if a willing host community can be found. In the 1990s an application to construct a test "rock laboratory" for a repository in Cumbria was turned down at a public inquiry. The government now suggests that a repository could be operational by 2040, but only initially for existing waste from the UK's Magnox (such as Hinkley A) and AGR (such as Hinkley B) reactors. CoRWM only made recommendations for 'legacy' nuclear waste declaring vehemently (Gordon McKerron chair of the committee) that new build spent fuel raised altogether different ethical considerations. The consultation (paragraph 176) has made the same mistake as the Government in

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		misinterpreting CoRWM's conclusions. The model proposed for this repository, known technically as a "Geological Disposal Facility", is the one currently under discussion in Sweden. This has yet to receive approval from the Swedish authorities, let alone be constructed. Problems have recently arisen in West Cumbria, the only local community which is considering the option to host a repository. The geological report examining the local rock formations has seemingly found most of the ground to be unsuitable for the process. http://www.whitehaven-news.co.uk/work-restarts-to-find-suitable-nuclear-dump-site-in-cumbria-1.766799?referrerPath=home/2.2837 It is impossible to say with any certainty that a community will step forward under the "voluntarism" scheme. In any case this approach is fundamentally flawed, as the geology should come first in any such decision. This was the conclusion of the evidence by Professor David Smythe of Glasgow University to the Department for Food and Rural Affairs (DEFRA) consultation on voluntarism in 2007. Professor Smythe was also a key witness at the 1990s (Nirex) inquiry referred to above and has worked as a Nirex contractor. He concluded that: 1. There are no suitable disposal sites in West Cumbria. 2. The British Geological Survey (BGS) geological criteria, which would allow inclusion of West Cumbria sites, are flawed. 3. The government's "voluntarism" process is flawed, as it does not prioritise scientific safety considerations. Professor Smythe's prediction in October 2007 is crucial in relation to the current (Summer 2010) BGS short-listing process: *"Once volunteered sites have been proposed, the British Geological Survey will apparently be employed to apply the exclusion criteria to the short-list of volunteered potential sites, 'in order to eliminate… any that are obviously unsuitable'. By employing the specified criteria West Cumbria would be back in the picture. This demonstrates that the current geological criteria are fundamentally flawed."* (Section 8, page 6)

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		The overall conclusions to be drawn from this study are: 1. The appropriate order for site selection should be firstly, geology and hydrogeology (and hence long term safety) and *then* the involvement of local communities. 2. Notwithstanding the order of site selection, West Cumbria has been proven to be geologically unsuitable. 3. Site selection has to be based on scientific principles, before applying any socio-political considerations. 4. The current consultation exercise should be considered to be fundamentally flawed, unless and until volunteer communities, **excluding any in West Cumbria**, come forward from districts which are known to have geological potential for hosting a waste repository. With considerable doubt cast over whether a suitable location to receive “spent fuel” from will be available at any given time in the future, EdF should at least be forced to delay its proposal for a new power station until such time as the repository is operational. In conclusion the consultation has not spelled out the real possibility that not only will EPR sites have spent-fuel stores with radioactive waste twice as hot and twice as radioactive as that from standard PWRs but also that these stores may exist in perpetuity as there is still no agreed location for a repository. **Intermediate Level Waste** We note with considerable concern and reservation that EdF are planning to incinerate Intermediate Level Waste. Our group is already strongly opposed to the incineration of Low Level Waste and campaigned successfully against a new incinerator at Hinkley Point B in 1995. We are appalled at the prospect that Edf with the support of the EA might consider the use of this technique just to reduce their volumes of waste. "*The assumption in the reference case for ILW conditioning that any evaporator concentrates that are ILW can be incinerated leaving no radioactive residue needs further explanation. Incineration of lower activity wastes (e.g. hospital wastes) is common practice in the UK but incineration would be novel.”* EA GDA consultation "UK EPR Assessment report - Disposability of ILW and Spent Fuel" (page 12 - para 41)

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		We also note with the same level of consternation that the NDA are considering incineration of reactor core graphite: NDA Report Higher Activity Waste Summary of options for waste graphite September 2010 We are appalled at this strategy with its obvious risks to local communities and oppose it in the strongest terms. **Concentrate and contain** On the other hand we applaud the preference for the principle of 'concentrate and contain' not 'dilute and disperse' referred to in paragraph 166. Unfortunately the text does not seem to receive 'ownership by the Environment Agency, who we believe should approach all radioactive waste issues with this as the primary principle rather than BAT or ALARP. **Balancing costs against public doses from discharges** In paragraph 170 the consultation promotes balancing costs against public doses from discharges, then concludes in paragraph 173 that EdF has provided a reasonable radioactive waste strategy for all waste streams. Although we would not concur with increased doses to nuclear workers in the equation, we believe that even with the extra costs of high level protective gear that the industry should take every conceivable measure to incur NO doses to the public. **Decommissioning** We note the EA's intention in paragraph 195 to obtain more detailed information from EdF/Areva on how exactly the EPR can be decommissioned safely. The outcome of the Magoxes not being designed with decommissioning in mind is a long and fraught process for engineers, as discussed in the BNFL Magox decommissioning diologues, attended by Stop Hinkley
GDA158	Member of Public	In general, I found the Generic Design Assessment reports well prepared and objective. In general, I broadly conclude along the same lines as the EA. However, the comments I have principally relate to Questions 16 and 17. As stated early on the paramount aspect of the GDA is to "assess the acceptability of the generic environmental aspects". However, from a design theory perspective, what is not clear is whether the 'functional requirements' have been properly identified. These are different to design criteria which are essentially that which is covered in the report. One example of functional requirements is 'sustainability'. This is the issue I have put succinctly. Some of the potential GDA issues the reports identified are related to 'Decommissioning and disposal of spent fuel'. This demonstrates my

ID	Member of Public / Company / Organisation	Question 2 - Do you have any views or comments on our preliminary conclusions on the radioactive waste and spent fuel strategy?
		point well as stated in paragraph 54, the key to identifying the functional requirements relates to "reduce the regulatory and planning risks associated with investing in new nuclear power stations". To illustrate the point further, I attach a recent paper which describes the reasoning behind identifying functional requirement [reproduced on our website]
GDA165	Suffolk Coastal District Council	Suffolk Coastal District Council supports the response from NuLeaf dated 4 October 2010 [GDA82] given this Council is a member of NuLeaf and has in the past expressed concerns about the arrangements for nuclear waste storage/disposal. 2. The Council has confidence in the technical appraisals undertaken by both the Environment Agency and the Health and Safety Executive and supports the overall conclusions of the GDA. However, there remain concerns about the lack detailed evidence in respect of decommissioning and its likely impacts, the longer term potential for the degradation of spent fuel.
GDA166	Cumbria County Council	As would be expected, the approaches to radioactive waste management in the GDA process are based upon a range of national policies and strategies. Although the EA concludes that Areva/EdF and Westinghouse have provided reasonable waste and spent fuel strategies, a review of the GDA consultation document raises issues about the extent to which a robust approach is being taken to the management of the uncertainties and risks inherent in the implementation of national policies and strategies.

3.3 Best available techniques to minimise the production of radioactive waste (Qn 3)

ID	Member of Public / Company / Organisation	Question 3 - Do you agree with our preliminary conclusions on best available techniques to minimise the production of radioactive waste?
GDA5	Member of Public	No
GDA25	Member of Public	No comment.
GDA38	Ingleby Barwick Town Council	Agree with BAT proposals to prevent corrosion and prevent creation of tritium. This needs to be made public to gain people's confidence. Also 1300m Watt station will be equivalent to approx 650 wind turbines. Note new reactor is 25% bigger but only produces 4% more tritium.
GDA51	Maldon Town Council	We are not qualified to answer this question, but look to EA and HSE to deal with these matters here.
GDA56	Member of Public	No, as I do not like any nuclear power station design...its short sighted thinking. Radioactive waste is still produced.
GDA66	Member of Public	Yes
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The GDA evaluation of BAT for the minimisation of a wide range of radio nuclides, and the conclusions drawn, is noted and is considered robust. The four remaining issues can all be addressed at the site specific permitting stage.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA84	Member of Public	Again, I am very happy with this.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 3.
GDA96	Springfields Site Stakeholder Group	In agreement with the preliminary conclusions for both designs, assuming they are consistent with Waste Hierarchy principles.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that, in the context of the GDA, Best Available Techniques (BAT) have been applied to minimise the generation of radioactive wastes at source. We recommend that the Environment Agency's conclusion takes the form of an explicit statement that the application of BAT has been demonstrated and that the design is therefore acceptable, rather than requiring this to be inferred from the statement in its current form. This will help ensure that the conclusions from the GDA are given due weight in legal and regulatory processes. In following

ID	Member of Public / Company / Organisation	Question 3 - Do you agree with our preliminary conclusions on best available techniques to minimise the production of radioactive waste?
		Environment Agency guidance, prospective operators including NNB GenCo will need to take account of site-specific factors when determining which radionuclides are most significant. This may result in different radionuclides or groups of radionuclides being assessed for different sites, in accord with the Environment Agency's broader approach to proportionate regulation. NNB GenCo will seek to work with both the regulator and the Requesting Parties to address the remaining issues identified by the Environment Agency. We are confident that these can be addressed in a timely fashion as GDA is completed or as part of site specific permitting.
GDA126	Sellafield Ltd	We believe that cost effectiveness is inherent in the concept of BAT; we would therefore look in this review for a statement from the EA that the designer has committed enough resources to this area and that it would be unreasonable for the EA to expect them to spend more.
GDA127	Horizon Nuclear Power	Horizon is pleased to note the EA has concluded that, subject to the listed "Other Issues", overall the UK EPR utilises the best available techniques (BAT) to prevent and minimise the production of radioactive waste. We understand from this conclusion that at the site specific permitting stage the requirement to demonstrate BAT in relation to the activity of radioactive waste produced by the UK EPR can be adequately demonstrated by reference to the GDA conclusions (excepting the noted "Other Issues"). As stated in our covering letter , we believe one of the measures of the success of the GDA process should be the degree to which such "generic" issues can be successfully addressed in the GDA and hence not need to be re-visited at each subsequent site specific permitting stage. The acceptance of the BAT case in relation to the generation of radioactive waste, which is perhaps one of the more generic radioactive substances regulation issues, is an example of the success of the GDA process.
GDA131	Studsvik UK Ltd	Extract from full document available on our website : '*The BAT correctly addresses ways to minimise the production of radioactive waste, liquid or solid, at production site, but does not fully consider the possibilities to minimise the waste after it has been produced. Treatment processes selected can both increase and decrease the final packaged waste volume, so BAT needs to be applied to the waste treatment options as well*'
GDA145	Institute of Mechanical Engineers	- The Institution supports the identification of Fuel Reliability as a key factor in minimising the production radioactive waste. The Institution would also expect Fuel Reliability to be a key factor in the Pre-Commissioning Safety Report and for the link
GDA154	West Somerset Council and Sedgemoor District Council	The techniques and processes described generally appear satisfactory; however several of these, for example metal smelting and incineration, rely on the establishment and development of suitable supply chains to ensure that they can play an effective role in waste minimisation. Where these do not exist, the

ID	Member of Public / Company / Organisation	Question 3 - Do you agree with our preliminary conclusions on best available techniques to minimise the production of radioactive waste?
		burden of waste management will fall entirely on disposal to GDF and LLWR. The Environment Agency also concludes (para. 290) that "at this stage that the UK EPR uses BAT to contain liquids and prevent contamination of groundwater in normal operation" but comments further that "the design of the discharge tanks needs to be resolved at the site-specific stage". The Environment Agency similarly requires EDF to "demonstrate that controls on the fuel pool are BAT to minimise the discharge of tritium to air at the site specific stage" (para. 314). Clearly the demonstration and continued application of BAT to discharge minimisation at a site-specific level is a key responsibility to be demonstrated by the operator and confirmed by the regulator. Similar comments apply to the Environment Agency assessment of releases of gaseous tritium, carbon-14, noble gases and iodine.
GDA157	Stop Hinkley	We are interested to see in paragraph 209 that EdF have several proposals to reduce the emissions of tritium. Tritium does seem to be a more harmful isotope than previously considered perhaps due to the small size of the molecule which can penetrate DNA. We note that in the first proposal (a) that Edf cannot quantify the potential reduction and in proposal (c) that the EA has discarded the idea. Proposal (b) seems to have the disadvantage that a 'burnable poison' gadolinium oxide would be deployed. Although we applaud any motive to reduce, or better still to prevent, discharges of tritium, we do have some concerns about the extensive use of toxic chemicals which may interact with radionuclides to produce further health impacts. We would like to see more evidence of the potential synergetic effect of this particular chemical with radio-isotopes. Despite the claimed reduction the EPR is still expected, according to EdF's predictions, to discharge a massive 0.16 TBq per day. As the EPRs are expected to be built in pairs then this figure is doubled in practice but should be added to discharges from neighbouring plants such as Hinkley B, subject to a likely life extension by EdF or Sizewell B. In the Bristol Channel Amersham International also discharges big volumes of tritiated water, considered more dangerous than tritium in gas form. We disagree with the EA's conclusion in paragraph 386 that tritium discharges have a low impact on the environment and believe that any abatement techniques should be applied to this isotope ubiquitous in the nuclear industry. **Stainless steel corrosion** The metal in the EPR must perform a near impossible task of maintaining integrity over the estimated sixty years life of the reactor. No previous reactors have accomplished this but several have produced radioactive leaks due to the failure of stainless steel components. As the steel is continually bombarded by tritium and other agents, its integrity must be assured. However John Busby makes the case that

ID	Member of Public / Company / Organisation	Question 3 - Do you agree with our preliminary conclusions on best available techniques to minimise the production of radioactive waste?
		even with upgrades to Inconel 690 or 800 and with weld metal replaced by alloy 52/153, the changes are still experimental and could still conceivably incur corrosion and cracks in vulnerable areas including the pressure vessel and cooling pond liner. http://www.after-oil.co.uk/GDA.htm

3.4 Gaseous discharge of radioactive waste (Qn 4)

ID	Member of Public / Company / Organisation	Question 4 - Do you have any views or comments on our preliminary conclusions on: a. best available techniques to minimise the gaseous discharge of radioactive waste, b. our proposed gaseous annual disposal limits and c. our proposed gaseous quarterly notification levels?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I support all three conclusions.
GDA27	Member of Public	European EPR - Is there a problem with the venting system for the cooling ponds?
GDA38	Ingleby Barwick Town Council	Agree with statement on page 60, para 314 regarding the discharge of tritium to the air. BAT must be employed. Page 61, para 324b thermal oxidation to convert carbon 14 to CO2. Carbon 14 is one element that the public know about as it can easily show in milk - so it must be dealt with. Great attention must be given to fuel cladding leaks as this causes great concern to the public. They picture uranium rods rolling across the streets!!!
GDA51	Maldon Town Council	A) & B) We are not qualified to answer this question, but look to EA and HSE to deal with these matters here. C) We note your limits.
GDA56	Member of Public	Please use funding to research the best renewable energy designs and not nuclear power designs
GDA66	Member of Public	The level of gaseous discharges depends on the resistance of the containments to tritium ingress and release. So the minimising of tritium generation is optimal.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The GDA evaluation of BAT for the minimisation of gaseous discharges from the EPR and the conclusions are noted and are considered robust. The requirement to consider Tritium discharge from the fuel pool is resolvable. The proposed limits for gaseous discharges appear to be well founded.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA84	Member of Public	I agree all these.
GDA88	Health Protection Agency	a) The Health Protection Agency has no comments on part a. of question 4. b) Proposed annual limits for gaseous discharges take account of annual average discharges from European PWRs. These discharges are shown in graphs in Appendix A.3.4. The same graphs show 'generalised derived limits' which "represent the values of discharges" leading to different doses to

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		the most exposed individuals. The HPA notes that the term "generalised derived limits" is used to indicate reference levels against which measurements in environmental media can be compared, and that for discharges to the environment the term Generalised Derived Constraint (GDC) is more appropriate. The HPA has calculated GDCs for a number of radionuclides which are based on the upper value of constraint on effective dose for members of the public of 0.3 mSv y -1 . The HPA notes that the consultation document does not specify how the generalised derived limits shown in Appendix A3.4 were calculated and how they compare with those determined by HPA. The Health Protection Agency notes that the use of GDCs calculated by the HPA instead of those included in Appendix A3.4 would not modify the conclusions reached by the Environment Agency. The Health Protection Agency notes that doses calculated as part of this assessment are not of health protection concern. c) The Health Protection Agency has no comments on part c of question 4.
GDA96	Springfields Site Stakeholder Group	Conclusions for both designs appear to be comprehensive and justified
GDA106	NNB Genco	a) We welcome the Environment Agency's conclusion that, in the context of the GDA, BAT has been applied to minimise the gaseous discharges of radioactive waste. We recommend that the Environment Agency's conclusion takes the form of an explicit statement that the application of BAT has been demonstrated and that the design is therefore acceptable, rather than requiring this to be inferred from the statement in its current form. We recognise that prospective operators will need to demonstrate that BAT is being applied to control the discharge of tritium from the spent fuel pool. However, it is important that a proportionate approach is applied, given that gaseous tritium discharges have been conservatively assessed at 0.26 µSv y -1 , i.e. less than 0.1% of the regulatory constraint and an even smaller proportion of average natural background. b) The consultation document appears to have translated the limits proposed by the Requesting Party in the Pre-Construction Environment Report (PCER) directly into 12 month rolling limits. However, the PCER proposals related to discharges over a calendar year. To impose these same values as rolling limits does not recognise their impact on operation over a fuel cycle, which may extend to 18 months and beyond, and during which the discharge of radioactivity may not be uniform. It could artificially constrain plant operation, with no real benefit via reduced discharges or impacts. This factor should be recognised when setting site-specific limits on a rolling year basis. Also, it should be noted that the limits apply to a single UK EPR unit. They do not reflect the position for sites with

ID	Member of Public / Company / Organisation	Question 4 - Do you have any views or comments on our preliminary conclusions on: a. best available techniques to minimise the gaseous discharge of radioactive waste, b. our proposed gaseous annual disposal limits and c. our proposed gaseous quarterly notification levels?
		two or more units, with the consequent potential for overlapping or staggered outages. Furthermore they do not take account of any associated facilities (such as interim spent fuel stores) which are outside the scope of the GDA. Finally, the proposals in the consultation document for limits on 'other radionuclides', which include the fission products that may released following fuel cladding failure, appear unduly restrictive. Minor fuel cladding failures cannot be ruled out, and since gaseous discharges are continuous, a short-term defect in abatement plant (such as HEPA filters) - even if quickly resolved by diversion to alternative plant - will result in increased discharges if it coincides with a cladding failure event. However, such events should not require disproportionate action such as immediate shut-down, as long as the impact is demonstrably below the threshold where, under Environment Agency guidance, further action to reduce discharges would be required. In accord with this, the consultation document recognises that, to avoid undue operational constraints, discharge limits should be set at a level that accommodates cladding failure. To account for this contingency, there should be a difference between the discharge limits and the expected best performance. This difference was recognised in the Requesting Party's evidence, but it has not been reflected in the proposed limits in the consultation document. We therefore believe that these proposals would represent an artificial and disproportionate constraint, not informed by the specific risks and impacts for any individual site. Instead, we believe that the system of Quarterly Notification Levels (QNLs) is the appropriate tool to ensure that such events are visible to the Environment Agency and to monitor the operator's effectiveness in applying BAT to minimise deviation from expected best performance. Prospective operators, including NNB GenCo, will need to take all these factors into account when proposing limits as part of their permit applications. This could result in prospective operators applying for discharge limits higher than those proposed by the Environment Agency within its Interim Statement of Design Acceptability. c) We support the Environment Agency's conclusion that QNLs are important in assessing environmental performance and ensuring that BAT is applied. Furthermore, we support the conclusion that operational data should be the basis for determining QNLs. However, when proposing initial QNLs, prospective operators including NNB GenCo will need to take account of the detailed design, operational regime and site specific factors in advance of operational data actually being available. QNLs for specific sites will also need to take account of any associated facilities (such as interim spent fuel stores) which are outside the scope of the GDA. As a result, when making site-specific permitting applications, prospective operators may propose QNLs that are different from those presented in the consultation document. We expect that these QNLs will

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		subsequently be reviewed when operational data become available, and modified where appropriate, so as to ensure effective operational control and demonstrate that BAT is being properly applied.
GDA119	Member of Public	Respondent provided a document, available to see on our website, an extract follows: '*Take Page 49, point 256 for example (Section 8.1.6 Radioactinides)* *"We conclude that radioactive actinides will not contribute significantly to discharges or radiological impacts. We do not consider it proportionate to assess actinides in detail and will not consider them in limit setting. The presence of actinides in discharges will be detected by the various monitoring arrangements."* *On the one hand you state "* ***They are potentially significant to the impact of disposals as they are alpha emitters****" yet dismiss them at the same time because of low volume. You also accept on trust the EDF/AREVA 'report that confirms the high removal efficiencies claimed' at predecessor plants. EDF/AREVA 'will install alpha detectors (to give an alarm at level of detection) on both gaseous and aqueous discharge points, but otherwise do not provide discharge estimates and do not consider disposal limits are required.'* *There's an awful lot of taking things on trust here by the EA. Does it not cross your mind to ask how old are these detectors? Are they still the Best Available Technique, to use your jargon, or Technology? EDF/AREVA's sensors may not have picked up alpha particles because they weren't sensitive enough or were wrongly sited in the first place. Perhaps there may be very few highly charged particles slipping through the net out into the environment, but they may still miss the lower charged or finer-sized ones which could still play havoc to someone's health nevertheless. These sensors may only be able to pick up concentrations of radioactivity above a certain point. Do you know that point? Whether or not actinides are getting through, should not prevent the EA setting a zero limit nevertheless*' '*One aspect that particularly sets off alarm bells for me is a contradiction between the 'concentrate and contain' strategy and, at the same time, a drive to keep radioactive waste stored on site to a minimum…* *On Page 50, Section 8.2.1, Primary Circuit – the reactor coolant system, Point 261:* *"The coolant purification system (CPS) takes coolant from the CVCS and passes it through a filter to remove particles and demineralisers (ion exchange resins) to remove soluble metal compounds. The filter will remove 99.9 per cent of particles sized at 1 micron or above… EDF and AREVA claim that using filters below 1 micron adds to generation of solid waste (spent filter cartridges) for minimal*

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		reduction in the radioactivity of the coolant. The filter elements and spent demineraliser resins need to be replaced at intervals and become solid radioactive wastes that are usually intermediate level waste (ILW). We consider using filters and demineralisers in this system in the UK EPR is BAT to minimise discharges to the environment and is consistent with the principle of 'concentrate and contain'." *So EDF/AREVA are only concerned with capturing particles sized 1 micron or over. As the filters don't achieve 100% and not knowing the volumes anyway, one wonders how many 1 micron + particles are missed. Again, without figures, what volume of radioactive material is below 1 micron? These smaller particles are obviously deemed unimportant if they are not going to filter them out. They'd rather spread them around the countryside than add filters as they would add to stored solid waste. It's not what I would call 'concentrate and contain' if they are going to do that!* *I'm not sure what discharge route they'll follow, gaseous or aqueous or both. I also suspect that these tiny particles would be least likely to set off their alarm systems and register least on geiger counters when scattered about.* ***The EA should be putting zero limits on all ultra fine particles.*** *However, I don't think they are even registering on the EA's radar - they most certainly should be*'
GDA123	L2 Business Consulting Ltd	QNL for tritium seems very high e.g. 45,000 GBq for EPR.
GDA126	Sellafield Ltd	a) We believe that cost effectiveness is inherent in the concept of BAT; we would therefore look in this review for a statement from the EA that the designer has committed enough resources to this area and that it would be unreasonable for the EA to expect them to spend more b) Sellafield Ltd positively supports the application of the methodology since the EA has proposed risk based limits i.e. for aerial Carbon 14 based on dose, Tritium and noble gases based on number of Becquerels with all other isotopes grouped together as an indicator for filter performance. There is some confusion in some of the tables that refer to "maximum annual ... radioactive discharge" and "proposed EA annual limits" and present the same numbers (e.g. on page 58) in both columns. The text suggests that the "maximum annual...radioactive discharge" is incorrectly worded since it includes all margins above peak discharges. c) QNLs have been based on expected (peak) discharges because of the design status and the "unknown" and to prompt as early review of performance; however we think that QNLs should be set on the same basis as the limits (as at Sellafield) and there is a strong argument for this.
GDA127	Horizon Nuclear Power	Horizon welcomes the EA's conclusion that overall, subject to one "Other Issue", the UK EPR utilises

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		BAT to minimise discharges of gaseous radioactive wastes. We would also suggest the clarity provided in the corresponding chapter of the Westinghouse AP1000 consultation document (paragraph 306), that the EA is satisfied that all sources of gaseous radioactive waste have been identified, is similarly provided in the forthcoming UK EPR decision document. Whilst we support the proposed approach of reviewing the quarterly notification levels (QNLs) once operational feedback becomes available, we also consider that QNLs can only be established on a site specific basis taking into account how the reactor will be operated and the discharge abatement technology used. Given the EA's challenging expectations, this conclusion should be re-drafted to acknowledge that the QNLs can only be set in the context of site specific permitting.
GDA129	Committee on Medical Aspects of Radiation in the Environment	Extract from full document available to see on our website: '*Given that these NPPs will be part of a new generation of plants, it might be expected that discharges would be lower than existing facilities, rather than 'within the range of historic discharges' which seems to be the criterion being applied by EA.* *In both documents, the statement is made that, for tritium discharges, 'the impact is low'. It should be noted that the recent AGIR report, supported by COMARE, suggests that current dose estimates are low by a factor of 2 for tritiated water and by a higher factor for organic forms. For both submissions, the levels of tritium and carbon-14 emissions are relatively high; the latter in particular appears to dominate the off-site doses. We recommend, therefore, that levels of carbon-14 are monitored in both liquid and atmospheric effluents.* *In several places, justification for not applying discharge reduction is stated as 'increasing doses to workers'. There does not seem to be data to support this – indeed it might be instructive to request data on expected staff doses from routine operation and maintenance.* *In order to make a more comprehensive comparison between designs, and given public apprehension in this area, it would be useful to seek information on the discharge and dosimetric consequences of potential abnormal situations.* *Both designs depend to a great extent on the manufacturing quality control and reliability of fuel elements in order to control waste arisings. It will be important to ensure that operators adhere to the intended operating standards over the lifetime of the plant and that it is made mandatory to implement any improvements made by the manufacturers. What arrangements would be available if current manufacturers went out of business? We support the EA approach of using QNLs in order to give early warning of problems arising from fuel assemblies*'

ID	Member of Public / Company / Organisation	Question 4 - Do you have any views or comments on our preliminary conclusions on: a. best available techniques to minimise the gaseous discharge of radioactive waste, b. our proposed gaseous annual disposal limits and c. our proposed gaseous quarterly notification levels?
GDA145	Institute of Mechanical Engineers	a) The Institution notes a thorough and reasonable section with conclusions that are generally supported, subject to an explanation of why the quarterly release levels are different from the AP1000 for tritium. Also, whilst recognising the value of Charcoal Decay Beds and Carbon Absorption Filters for minimising gaseous discharges from ventilation systems, the Institution advises that such filters present significant fire hazards requiring mitigation by the installation of appropriate fire detection and protection equipment. b) The Institution agrees with the consultation document conclusions with sensible limits based on sound data and experience. (Same as the AP1000 limit) c) The Institution agrees with the consultation document conclusions.
GDA154	West Somerset Council and Sedgemoor District Council	We have no particular observations with regards to techniques for minimising gaseous discharge of radioactive waste, annual disposal limits and quarterly notification levels. At this stage our primary concern is that site specific proposals are assessed based on detailed dispersion modelling. This should take into account local topography and other influencing structures, and provide evidence that ground level exposure levels, either to humans or vulnerable species, represent doses that would not result in deleterious health effects
GDA166	Cumbria County Council	That gaseous and aqueous discharges must be held below agreed levels and that marine discharges should not exceed those of comparable power stations worldwide. The County notes that EA seeks more information on gaseous discharges and that no formal BAT assessment has yet been undertaken for aqueous discharges.

3.5 Aqueous discharge of radioactive waste (Qn 5)

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I am pleased with all three conclusions.
GDA38	Ingleby Barwick Town Council	a) Should be reviewed regularly to make sure that any improved techniques that may become available are justified. b) and c) should be kept under review to ensure that they are appropriate. Page 77, para 435 Sea water must be sampled regularly to help keep the public on our side.
GDA51	Maldon Town Council	a) Note that Evaporation in place of ION exchange could be detrimental to our local River Blackwater and our local shellfish industry. Design of outlets site specific. UKEDF we note with concern that they compare Design Selected sites with Irish Sea/Cumbria and that would give pessimistic results. b) We note your limits. c) Seem reasonable.
GDA56	Member of Public	Please use funding to research the best renewable energy designs and not nuclear power designs
GDA62	Member of Public	• What is the expected "detection performance" of the in-line detectors? • What is the calculated (though sub-detectable) "amount" of alpha emitters? • What is the expected isotopic content of such alpha emissions? • What would be the source of any alpha emitters in the aqueous discharge? • In line detectors "detect" the presence of alpha emitters, what mechanisms will "prevent" the discharge of alpha emitters? • What factors might lead to the presence of "detectable amounts" of alpha emitters in the aqueous discharge stream?
GDA66	Member of Public	At Sizewell B an iodine absorbing charcoal filter caught fire after a loss of coolant accident from the pressuriser heater. It appears that the control system of the pressuriser masked the leaks form the

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
		electric heaters. The EPR pressuriser support skirt should be provided with inspection holes to detect leaks as per the replacement for Fort Calhoun. Other cooling circuit covers should be provided with means of inspection for leaks, such as the control rod mechanism covers which disguised the leak at Davis Besse Ohio. The control system should be scrutinised to see if it can detect small leaks.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The GDA evaluation of BAT for the minimisation of aqueous discharges and the conclusions are noted and are considered robust but the possibility of further abating technologies being developed, and their state of development, needs to be kept under regular review. The issues relating to the demineralisation system are resolvable. The proposed limits for aqueous discharges appear to be well founded.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA82	Nuclear-Free Local Authorities	The EA's consultation documents mention OSPAR only in connection with annual reporting requirements. (6) The requirement to reduce concentrations in the environment to close to zero is simply not referred to. Full response at: http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf
GDA84	Member of Public	I agree all these.
GDA88	Health Protection Agency	a) The Health Protection Agency has no comments on part a of question 5. b) See comment on part b of question 4. c) The Health Protection Agency has no comments on part c of question 5.
GDA95	People Against Wylfa B	Despite the substantial amount of material in the Environment Agency documents, there is a complete absence of any explanation as to how plans to approve new radioactive waste discharges into the environment can possibly be consistent with commitments made by the UK government to the OSPAR convention on the protection of the marine environment of the north east Atlantic. The commitments made aim at achieving close to zero concentrations of radioactive discharges to the sea from Sellafield by 2020. Following yesterday's announcement that Wylfa nuclear power station has been granted an extension of two years further operation, the terms of the OSPAR convention will be pushed to the very limit, since the B205 Magnox reprocessing plant at Sellafield is the worst polluter of the whole complex.
GDA96	Springfields Site	Conclusions for both designs appear to be comprehensive

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
	Stakeholder Group	
GDA106	NNB Genco	a) We welcome the Environment Agency's conclusion that, in the context of the GDA, BAT has been applied to minimise the aqueous discharges of radioactive waste. We agree that the main technologies proposed in the GDA for the EPR (filtration, demineralisers and evaporation) represent BAT. We recommend that the Environment Agency's conclusions take the form of an explicit statement that the application of BAT has been demonstrated and that the design is therefore acceptable, rather than requiring this to be inferred from the statement in its current form. We recognise that in their site-specific assessment, prospective operators including NNB GenCo will need to demonstrate that BAT is being applied to the management of liquid effluents. This will include a demonstration that the specific application of the identified technologies represents an optimised approach for that site. However, it will again be important that this is proportionate, recognising the significance of the impact. b) The consultation document appears to have translated the limits proposed by the Requesting Party in the Pre-Construction Environment Report (PCER) directly into 12 month rolling limits. However, the PCER proposals related to discharges over a calendar year. To impose these values as rolling limits does not recognise their impact on operations over a fuel cycle, which may extend to 18 months and beyond, and during which the discharge of radioactivity may not be uniform. Prospective operators will need to evaluate their planned operation over the fuel cycle against the regulatory limits. The GDA has established a design envelope within which it will be for prospective operators to determine their operating philosophy, and this includes their strategy for disposal over the operating cycle. The translation of calendar year limits directly into 12 month rolling limits could artificially constrain plant operation, with no real benefit via reduced overall discharges or impacts. This factor should be recognised when setting site-specific limits on a rolling year basis. Furthermore, we note that the proposed limits apply to a single UK EPR unit. Thus they do not reflect the position for sites with two or more units, with the consequent potential for overlapping or staggered outages. This adds yet further to the inflexibility of rolling limits. Finally, the limits do not take account of any associated facilities (such as interim spent fuel stores) which are outside the scope of the GDA. Proposed developments, including those by NNB GenCo, may differ from the GDA assumptions in these respects. Prospective operators, including NNB GenCo, will need to take all these factors into account when proposing limits as part of their permit applications. This could result in prospective operators applying for discharge limits higher than those proposed by the Environment Agency within its Interim Statement of Design Acceptability.

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
		c) We support the Environment Agency's conclusion that QNLs are important in assessing environmental performance and ensuring that BAT is applied. Furthermore, we support the conclusion that operational data should be the basis for determining QNLs. However, when proposing initial QNLs, prospective operators including NNB GenCo will need to take account of the detailed design, operational regime and site specific factors in advance of operational data actually being available. Prospective operators will also need to take account of any associated facilities (such as interim spent fuel stores) which are outside the scope of the GDA. We note that the proposed QNL for liquid carbon-14 discharges appears to be low, given that the formation mechanism (which is linked to power production) and discharge regime (which may result in several months' arisings being discharged in a single month) mirror that of tritium. The QNL for carbon-14 appears to be based on a uniform discharge. This would be restrictive without any benefit via reduced overall discharges or impacts. As a result, when making site-specific permitting applications, prospective operators may propose QNLs that are different from those presented in the consultation document. We expect that these QNLs will subsequently be reviewed when operational data become available, and modified where appropriate, so as to ensure effective operational control and demonstrate that BAT is being properly applied.
GDA119	Member of Public	Extract from full document available to see on our website: '*All processes at the 18-month refuelling, repair and maintenance interval should be scrutinised to ensure no radioactive particles of whatever size or degree of radioactivity should be permitted to escape into the environment.* *The idea that there should be a blow through, with highly hazardous discharges into the environment is not acceptable.*'
GDA126	Sellafield Ltd	a) We believe that cost effectiveness is inherent in the concept of BAT; we would therefore look in this review for a statement from the EA that the designer has committed enough resources to this area and that it would be unreasonable for the EA to expect them to spend more. b) Sellafield Ltd positively supports the application of the methodology since the EA has proposed risk based limits i.e. for liquid Carbon 14 based on dose, Tritium based on number of Becquerels, Cobolt 60 and Caesium 137 as reasonable indicator species, and all other isotopes grouped together based on dose. Sellafield Ltd would like to see this approach incorporated more widely (at Sellafield) in the future, i.e. increased application of the risk based approach and grouping together of radioisotopes hence minimising the number of individual limits for low Becquerel and low impact (low risk) species.

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
		There is some confusion in some of the tables that refer to "maximum annual...radioactive discharge" and "proposed EA annual limits" and present the same numbers (e.g. on page 69) in both columns. The text suggests that the "maximum annual...radioactive discharge" is incorrectly worded since it includes all margins above peak discharges. c) QNLs have been based on expected (peak) discharges because of the design status and the "unknown" and to prompt as early review of performance; however we think that QNLs should be set on the same basis as the limits (as at Sellafield) and there is a strong argument for this.
GDA127	Horizon Nuclear Power	Horizon welcomes the EA's conclusion that overall, subject to one "Other Issue", the UK EPR utilises BAT to minimise discharges of aqueous radioactive wastes. We would also suggest the clarity provided in the corresponding chapter of the Westinghouse (WEC) AP1000 consultation document (in paragraph 410), that the Environment Agency is satisfied that all sources of aqueous radioactive waste have been identified, is similarly provided for the UK EPR. Similarly as in our response to Q4, whilst we support the proposed approach of reviewing the quarterly notification levels (QNLs) once operational feedback becomes available we also consider that QNLs can only be established on a site specific basis taking into account how the reactor will be operated and the discharge abatement technology used. Given the EA's challenging expectations, this conclusion should be re-drafted to acknowledge that the QNLs can only be set in the context of site specific permitting.
GDA129	Committee on Medical Aspects of Radiation in the Environment	Extract from full document available to see on our website: '*There is no mention in either submission of terminal filtration in the sea discharge lines, which could be important in the event of waste processing plant failure. While EA does not propose continuous monitoring of the final discharge, this might well be of value and could be implemented at relatively small cost – it would not need to be nuclide specific*.'
GDA133	Nuclear Waste Advisory Associates	The respondent provided a document (available to see on our website) covering many issues. In particular for aqueous discharges and OSPAR the following is an extract: '*Under an international treaty known as the OSPAR Convention on the Protection of the Marine Environment of the North East Atlantic, the UK Government is committed to:* *"...progressive and substantial reductions of discharges, emissions and losses of radioactive substances, with the ultimate aim of [achieving] concentrations in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances." [by*

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
		2020]. *This is set out in the Department for Energy and Climate Change's (DECC's) Guidance on Radioactive Discharges (2009).61* *The EA's consultation documents mention OSPAR only in connection with annual reporting requirements. 62 The requirement to reduce concentrations in the environment to close to zero by 2020 is simply not referred to. It is difficult to see how this requirement can be met whilst adding to reactor discharge through New Build* '
GDA143	Countryside Council For Wales	Extract from full document available to see on our website: '*We note that the report justifies the environmentally safe limits for discharge of radio nuclides in reference to human exposure limits. When deriving these limits consideration should also be given to the effects on ecosystems, habitats and species, particularly in light of the legislative requirements of the Birds and Habitats Directives*'
GDA145	Institute of Mechanical Engineers	a) Best available techniques to minimise the aqueous discharge of radioactive waste? - The Institution notes a thorough and reasonable section the conclusions of which are generally supported, subject to an explanation of the discrepancies of the quarterly levels which are set at ¼ of the AP1000 level when the annual limit is the same? - The Institution advises recent experience on the installation of filtration equipment in final aqueous discharge line should be considered when sizing filters for the liquid waste processing system. - EA expect a detailed and robust justification of options for carbon-14 abatement in radioactive waste discharges to be provided at site-specific permitting (other issue AP1000-OI05) however although the EPR design does not provide Carbon 14 abatement there is no similar requirement / issue placed on EDF & AREVA. - The Institution feels consistency should be applied by EA. b) Our proposed annual disposal limits? - The Institution agrees with the consultation document conclusions with sensible limits based on sound data and experience. c) Our proposed aqueous quarterly notification levels? - The Institution agrees generally with the consultation document conclusions, however, there is inconsistency with limits set for the AP1000. The quarterly notification level for EPR seem high compared to the annual limit.
GDA154	West Somerset Council and Sedgemoor District	We have no particular observations with regards to techniques for minimising aqueous discharge of radioactive waste, annual disposal limits and quarterly notification levels. At this stage our primary

ID	Member of Public / Company / Organisation	Question 5 - Do you have any views or comments on our preliminary conclusions on? a. best available techniques to minimise the aqueous discharge of radioactive waste, b. our proposed aqueous annual disposal limits and c. our proposed aqueous quarterly notification levels?
	Council	concern is that site specific proposals are assessed based on detailed modelling of site specific conditions to provide confidence that the integrity of marine waters would not be compromised and that human and vulnerable marine receptors (such as those which contribute to the qualification of Natura 2000 sites) would not be affected.
GDA166	Cumbria County Council	That gaseous and aqueous discharges must be held below agreed levels and that marine discharges should not exceed those of comparable power stations worldwide. The County notes that EA seeks more information on gaseous discharges and that no formal BAT assessment has yet been undertaken for aqueous discharges.

3.6 Solid radioactive waste (Qn 6)

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I welcome the conclusions you have reached.
GDA38	Ingleby Barwick Town Council	This needs much more detail to give the public reassurance and to prevent misinformation from the anti-nuclear lobby. Need to reduce Cobalt 60 as it is a corrosive product. Need strict supervision of waste. Keep waste separate to reduce contamination of LLW.
GDA51	Maldon Town Council	Solid radioactive waste treatment as proposed not up to spec of Magnox South e.g., Bradwell. We see no need for local incineration, transport by Rail a better option for eventual disposal. UK EPR we note your sceptical comments. Also that on site smelting has been considered, as has incineration, but not carried out a review of Waste Streams. Just implied that other plants around the world are worse. Only basic evidence provided.
GDA56	Member of Public	Radioactive waste would not be created if the power stations were not an option
GDA66	Member of Public	No
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	Consideration of LLW and ILW issues in the GDA Evaluation of the EPR appear comprehensive. The uncertainty regarding disposability of long term stored ILW is a ‘generic' UK issue The requirement to provide additional information on LLW smelting, incineration of ion exchange resins and waste minimisation at the site specific permitting stage is sound.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA80	Nuclear Legacy Advisory Forum (NuLeAF)	Low Level Waste Management: The EPR GDA concludes that: AREVA/EDF describe how LLW "will be" managed and disposed of throughout a reactor lifecycle; the design is not expected to produce LLW for which there is no foreseeable disposal route; AREVA/EDF have demonstrated that LLW waste streams would meet the criteria for disposal in a LLW facility; and AREVA/EDF have provided basic evidence of how they will minimise the disposal of LLW (para 473). It is arguable that in reaching the first two conclusions the EA has taken an overly optimistic view of the risks and uncertainties inherent in the implementation of Government policy for LLW management. In particular, there are uncertainties over:

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		the future of the LLW Repository near Drigg (concerning the post-closure safety case and whether planning permissions will be obtained for vaults 10-15); the timing, approach and prospects for successfully siting any replacement national LLW disposal facility; and the extent to which landfill facilities will become available for the disposal of VLLW. Despite this, the EA appears to be comfortable with EDF/AREVA's intention to have a 'buffer' storage capacity for LLW at each station site for only a year of operation (para 455). It is arguable in the light of the uncertainties that the provision of 'buffer' storage should be for considerably longer periods of time. See full response at: http://www.nuleaf.org.uk/nuleaf/documents/Comments_on_EA_GDA_NuLeAF_4_October_2010.pdf
GDA82	Nuclear-Free Local Authorities	According to the EA it is assumed that waste fuel would be packaged before being sent for disposal. However, no description of how this would be achieved is provided. This is important as the packaging facilities could involve further discharges of radioactivity, together with an increase in the risk of accident whilst waste is transferred around the site. The information supplied by EDF on this issue was supplied too late to be available for this consultation. (13) Although information was supplied by Westinghouse, this adds to uncertainties for communities because it is not clear whether the packaging would be done at the reactor site - or at a central facility. (14) EDF assume that certain Intermediate Level Wastes (ILW) can be incinerated leaving no radioactive residue. The EA state that this assumption: " needs further explanation " - and that the incineration of ILW would be " novel ". (17) The EA should rule out incineration of these wastes at this stage, as it would clearly fail to meet the requirement ‘Best Available Techniques' discussed above. Work by Nirex has indicated that carbon from a nuclear disposal facility could escape as radioactive methane gas and carbon dioxide. This would be able to quickly reach people at the surface. Nirex have calculated the resultant risk could be as high 100 times the allowable limit as soon as the dump has been closed. (18) Full response at: http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf
GDA84	Member of Public	All fine again.
GDA88	Health Protection Agency	The consultation document should make it clear in its conclusions that the AREVA/EDF's 'reference case' Flamanville 3 is still under construction and will not be operational for at least 2 years and therefore cannot provide evidence of actual waste arisings. Furthermore, the EA cites a review of waste arisings at comparable reactors that is not available in the public domain, and therefore it is difficult to compare EDF/AREVA's estimates with independently collated data (Name removed, Assessing Types and

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		Quantities of Solid Radioactive Waste Arising from Operational Discharge Abatement Plants of Pressurized Water Reactors, September 2009 (MSc sponsored by the Environment Agency as part of the EMPOWER project)) The consultation document states that some waste may be reclassified. It is not clear if as a result of this reclassification, or for other reasons, repackaging is likely to be required and what provisions have been made if this is the case.
GDA96	Springfields Site Stakeholder Group	The amount of solid waste should be small in comparison to that of the existing UK reactors and their conclusions appear to be justified.
GDA106	NNB Genco	We welcome the Environment Agency's conclusions on solid radioactive waste, that all waste streams have been identified and that proven and recognised treatment and conditioning techniques will be used. We agree that the design is not expected to produce Low Level Waste (LLW) for which there is no foreseeable disposal route. NNB GenCo will work with RWMD and regulators to ensure that conditioning of ILW does not foreclose options until a Letter of Compliance (LoC) has been approved which demonstrates that packages will be disposable following long term interim storage. We recognise that prospective operators, including NNB GenCo, will need to demonstrate that site specific strategies for waste management represent BAT. NNB GenCo will work to implement an Integrated Waste Strategy, informed by the Waste Hierarchy, which optimises treatment methods and disposal routes in step with development of the UK LLW strategy.
GDA112	Blackwater Against New Nuclear Group	The respondent provided a document, available to see on our website, the following is an extract: ‘ *It is proposed to manage long-lived solid radioactive wastes (ILW) and spent fuel on site. There are two problems here. The first is that the methods of management are not specified in detail and may be subject to variation. It is assumed that wastes will eventually be disposed of in a geological repository and, in the meanwhile, will be appropriately managed. ILW will be immobilised and encapsulated and stored on site or possibly moved to another (regional or central) store until a repository becomes available.* *Beyond this the design details are vague and the regulators are clearly unsatisfied with the level of information provided. In the case of ILW they require ‘more information on the potential for degradation of ILW over the longer term that might affect disposability and safe storage’ (p.85). More information will be required on proposed storage facilities. In particular the risks to workers, the environment and to the population arising from encapsulation, waste transfer and transport needs to be assessed and there is precious little information on these matters. The regulators regard the management of these wastes as a key issue and will be looking in more detail at the plans in its Step 4 assessment. Indeed, it may be said*

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		that the information supplied in the consultation document is vague and far too flexible. *Therefore in answer to Question 6, BANNG considers the response by the regulators to be complacent and inadequate.* ***In our view the regulators should call for a much more detailed and robust explanation of proposed ILW storage together with details of the methods and facilities required and indicate that this should be supplied as part of the current assessment and not delayed until Step 4***'
GDA119	Member of Public	The respondent provided a document, available to see on our website, the following is an extract: '*It is highly likely a waste repository will never be build. The stores should be designed to fulfil all the requirements on the assumption the High Level Waste/Spent Fuel will be on site permanently. To my mind, it is mere political expediency to say otherwise and I would deem it irresponsible to go forward under that speculation*'
GDA126	Sellafield Ltd	No comments
GDA127	Horizon Nuclear Power	Horizon notes the EA's conclusion that EDF and AREVA have described how low level waste (LLW) and intermediate level waste (ILW) will be generated, managed and disposed of; the types, and quantities, of LLW and ILW which will typically be produced and how these types of waste will be treated and conditioned. We note that the HSE will be looking at EDF and AREVA's plans for conditioning in more detail as part of its Step 4 assessment. We agree with the EA's conclusion that the EPR design is not expected to produce LLW and ILW for which there is no foreseeable disposal route. We note that the EA will continue to work with the HSE during Step 4 assessment to look at the potential for degradation of ILW over the longer term. The EA has raised four "Other Issues": The disposability of ILW following longer term interim storage. We are confident that it will be possible to conclude that ILW can be safely stored over the longer term and that it will then be possible to dispose of it. Many thousands of packages of legacy ILW at Nuclear Decommissioning Authority (NDA) owned sites have already been prepared with the expectation that these will be disposable and the NDA/Radioactive Waste Management Division (RWMD) has issued Letters of Compliance to provide confidence that this will be the case. Horizon recognises that it will need to continue to engage with the RWMD to obtain appropriate Letters of Compliance for our site specific proposals. Meeting the conditions of acceptance for smelting of LLW during site-specific permitting. Horizon is rather surprised that this issue was raised specifically. It is clear that if we wish to pursue smelting of

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		LLW as part of a recycle, reuse and waste minimisation strategy, then we would need to identify an appropriate service provider and discuss with them whether our waste could be handled by their facility. Meeting the conditions of acceptance for incineration of waste during site-specific permitting. Horizon is rather surprised that this issue was raised specifically. It is clear that if we wish to pursue incineration of waste as a waste minimisation strategy, then we would need to identify an appropriate service provider and discuss with them whether our waste could be handled by their facility. Evidence during site-specific permitting that specific arrangements for minimising the disposals of LLW and ILW are BAT. Horizon is aware that during site-specific permitting it will need to present information to demonstrate BAT. Minimising the disposals of LLW and ILW is intimately linked with how the reactor is operated, what discharge abatement technology is deployed and what conditioning and packaging technologies are used. Minimising the quantities of waste for disposal is not something that can be targeted in isolation but will instead be a balance between a number of competing issues such as operator doses and environmental discharges.
GDA131	Studsvik UK Ltd	The respondent provided a document, available to see on our website, below is an extract: '*It is not clear how BAT or the Waste Management Hierarchy has been considered for all solid radioactive wastes. Treatment of metallic waste has been considered, but no facilities have been investigated or if the potential waste will fit their waste acceptance criteria (WACs). Incineration of LLW has been checked against the WACs for one facility, Centraco, partly owned by EdF and one VLLW facility in the UK.* ***Specifically on Ion exchange Resins*** *Incineration or grouting of ion-exchange resin can not be considered BAT. Technologies such as steam reforming will minimise the waste from the ion exchange resin with a factor 7 to 30 depending on resin type, loading and boron content*.'
GDA133	Nuclear Waste Advisory Associates	The respondent provided a document, available to see on our website, raising many waste management issues. The following is an extract from the conclusions: '*3. At present it is quite apparent the nuclear industry would not be able to dispose of new build reactor wastes safely. It would be wholly irresponsible to wait until such wastes are created to confirm this. Unless and until the nuclear industry are able to demonstrate that new reactor wastes could be disposed of safely there should be no further steps taken towards the development of new reactors.*

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		4. If the nuclear industry is not required to prove it has a safe disposal route for wastes until after the planned reactors are built, then a powerful financial momentum would be created towards allowing the reactors to operate – and so produce waste fuel for which there was no long term safe management route. *5. New Build waste fuel requires on-site storage for one hundred years simply to allow it to cool down. Adding on the expected operating life of 60 years means that a NewBuild reactor site could end up as a waste site for at least 160 years. This means communities around new reactors might be expected to host a waste site for almost two centuries. In fact the rector site could possibly be a waste site indefinitely – if, as looks quite likely, it not possible to develop a safe disposal route for the wastes..* *6. The EA consultation leaves communities around nuclear sites with far too many uncertainties. As well as not knowing how long waste fuel might be stored on site, or what kind of a store would be used, they do not know whether they will be required to host a packaging facility, with its associated risks, or even an Intermediate Level Waste incinerator. Communities on transport routes do not know when waste may be transported through them. It is possible that a community may be asked to host a centralised storage and packaging facility at some point in the future. No indication is given over whether such a facility would be required, and if so where it would be. This means communities that might be affected by NewBuild wastes are not able to contribute to decisions that would affect them* ‘
GDA135	Member of Public	See Q2.
GDA145	Institute of Mechanical Engineers	The Institution note a thorough and reasonable section the conclusions of which we generally support. The Institution fully support the requirement for the assessment of disposability of ILW following longer term interim storage pending disposal. (UK EPR-OI08) as the uncertainty surrounding the ILWR means we must have assurance of the efficacy of long term interim storage.
GDA154	West Somerset Council and Sedgemoor District Council	We have no specific comments on the quantities or natures of solid radioactive wastes that are proposed to be produced by operation of the AREVA EPR reactor. As discussed above, in regards to management of solid radioactive waste the authorities’ main concern relates to the fact that most disposal routes ultimately depend on the timely provision of waste disposal facilities as envisaged by the national LLW strategy and the MRWS process. It is important to keep the processes on the site well-controlled, but crucial to keep waste plans updated in the context of overall UK progress. Paragraph 457 acknowledges that EDF and AREVA will dispose of LLW ‘promptly’ after it has been generated to the low level waste repository (LLW). We note the earlier discussion (para 168) that solid radioactive waste will be disposed of ‘as soon as practicable’ (in contrast with ‘promptly’), and while

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		discussion is provided of EDF and AREVA's Form D1 applications for disposal, we welcome acknowledgement (para 460) that the LLWR cannot guarantee future capacity today. The consequence of this is that the lack of a guaranteed disposal option leads to the potential that 'prompt' disposal may not indeed be 'practicable'. While on-site storage capacity for LLW is enough to ensure buffer capacity for more than one year of operating (para. 455) we remain concerned that proposals need to be supported with the confidence that sufficient capacity is provided for the necessary on-site storage. The reference case, together with site specific proposals, therefore need to be supported by contingency plans detailing measures to be taken in the event of a lack of capacity at LLWR. With regards to Intermediate Level Waste (ILW), our primary observations relate to the fact that there are currently no final disposal facilities for ILW in the UK. Our concerns with regards to ILW are twofold, relating to the safe management of ILW on-site until a storage facility were to be available, and the likelihood and timing of a suitable storage facility being made available. Paragraph 480 recognises that ILW will be stored on-site until a final disposal site is opened, while interim storage facilities will be designed for 100 years operation after first fuel loading. With no current commitment to delivery of a geological disposal facility we would look for additional confidence that on-site facilities would provide long-term safe storage in the event that a GDF were not delivered, and that appropriate contingency plans were established to ensure that the site would not be left with a further burden of ILW storage beyond the timescales anticipated. We note the further discussion of the possibility for waste recovery and incineration as possible options for waste management (para. 450) and reducing the ultimate demand on LLWR. While we welcome proposals for recycling and re-use, and also for incineration, as means of reducing demand on LLWR where appropriate, we are also aware that there remains the need for these options to be supported with a supply chain network, and that this is not yet demonstrated. The potential absence of feasible recycling and recovery facilities together with absence of guaranteed GDF and LLWR further compound the potential need for on-site storage of LLW and ILW.
GDA161	Somerset County Council	The respondent provided a document, available to see on our website, the following is an extract regarding low level waste: '*From a review of news reports it is our understanding that the waste storage facility at Drigg is filling up more quickly than anticipated and will need to expand in the near future. Planning permission for expansion of the site is not currently in place. AREVA/EDF proposes sending all*

ID	Member of Public / Company / Organisation	Question 6 - Do you have any views or comments on our preliminary conclusions on solid radioactive waste? If so, please use the box below to provide any details.
		Low level Waste (LLW) produced to the disposal facility at Drigg in Cumbria. They also propose building a contingency 'buffer' storage facility on site which is able to hold one year's worth of LLW production. Due to the uncertainty over the expansion of the Drigg site, the AREVA/EDF proposals do not seem to adequately take account of how LLW will be managed'
GDA166	Cumbria County Council	Low Level Waste management: The EPR GDA concludes that: Areva/EdF describe how LLW "will be" managed and disposed of throughout a reactor's lifecycle; the design is not expected to produce LLW for which there is no foreseeable disposal route; Areva/EdF have demonstrated that LLW waste streams would meet the criteria for disposal in a LLW facility; and Areva/EdF have provided basic evidence of how they will minimise the disposal of LLW (para 473). It is arguable that in reaching the first two conclusions the EA has taken an overly optimistic view of the risks and uncertainties inherent in the implementation of Government policy for LLW management. In particular, there are assumptions about the future of the LLW Repository near Drigg and whether it can make a post-closure safety case to permit disposal to vault 9, and whether planning permissions will be obtained for vaults 10-15); the timing, approach and prospects for successfully siting any replacement national LLW disposal facility; and the extent to which landfill facilities will become available for the disposal of VLLW. Despite this, the EA appears to be comfortable with EdF/AREVA's intention to have a 'buffer' storage capacity for LLW at each station site for only a year of operation (para 455). It is arguable in the light of the uncertainties that the provision of 'buffer' storage should be for considerably longer periods of time. Similarly, for Westinghouse, EA conclude that lifecycle management for LLW has been demonstrated and that there are no LLW arisings for which there is no foreseeable disposal route.

3.7 Spent fuel (Qn 7)

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I am satisfied with your conclusions.
GDA38	Ingleby Barwick Town Council	We could go public on the little fuel the reactor in fact uses, e.g. two tonnes per year, of which 5% is Uranium 235 which is 100kg per year. The public have heard about enriched uranium. We should explain what it means in a power station. Use less fuel in the modern reactors due to increased burn up of the fuel, hence less waste. We save 7% uranium over our present reactors.
GDA44	Member of Public	Fuel cladding/handing spent fuel rods. The amount of radioactivity associated with the spent fuel rods being taken out of the reactor dwarfs the environmental releases. I think that we should "dig further" in relation to this issue.
GDA51	Maldon Town Council	Spent fuel not expected to be reprocessed is short-sighted and wasteful. What about the use of fuel for the next generation of plant? Do we have an inexhaustible supply of Uranium 235? We note no information on long term storage. UK EPR we note that a further interim storage facility (shared off site), may have to be built. Again no indication of transport implications.
GDA52	Member of Public	How can we say that we would be prepared to issue an interim SoDA when we don't know if the fuel is disposable?
GDA56	Member of Public	Uranium is finite, renewable energy is from sources that are not
GDA66	Member of Public	No
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	In our opinion this is the biggest ‘outstanding issue' and whilst covered in the AREVA/EDF submission and the GDA the issue is far from being resolved. This is a generic issue for all planned power plants rather than a design specific or site specific issue. The intention to work with the HSE in evaluating the disposability of long term stored spent fuel is noted. As such we support the decision to issue an interim statement of design acceptability.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA80	Nuclear Legacy Advisory	Spent fuel storage: The EPR GDA consultation document refers to spent fuel interim stores at each

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
	Forum (NuLeAF)	station being designed to be maintained or replaced to last for at least 100 years from when spent fuel is first emplaced in the store (para 175). However, the draft Nuclear National Policy Statement (NPS) assumes that spent fuel could be stored on the station sites for up to 160 years (para 3.8.17). The duration of interim storage of spent fuel is related to reactor lifetime and the period required for cooling prior to geological disposal. The figure of up to 160 years is based on a reactor lifetime of 60 years and a cooling period of up to 100 years for high "burn-up" spent fuel. Although the 100 year cooling period is based on conservative assumptions and could be considerably shorter, it is arguable that the approach in the GDA should be consistent with the conservative case in the draft NPS. Spent fuel disposal: The EPR GDA consultation document does not contain an explicit assumption about whether there is a robust programme for identifying a suitable site for a GDF for disposal of new build spent fuel. The Government's aspiration is to find a single site for a GDF that would enable legacy and new build higher activity waste (including spent fuel) to be disposed of in the same facility. There are, however, a range of risks and uncertainties that may prevent this. For example, the capacity of suitable host rock at a preferred site may not be sufficient for new build spent fuel, or the volunteer communities may not agree to the disposal of new build spent fuel. It is arguable that the GDA process should explicitly address the implications of these potential scenarios for the interim management of spent fuel. See full response at: http://www.nuleaf.org.uk/nuleaf/documents/Comments_on_EA_GDA_NuLeAF_4_October_2010.pdf
GDA82	Nuclear-Free Local Authorities	New reactors are currently expected to come on stream between around 2020 and 2025 and remain in operation for 60 years - until 2080-85. So the final load of fuel might need to be stored until 2180 - 2185. The Government's Fixed Unit Price Consultation suggests that the emplacement of legacy waste may not be completed until 2130 in any case, and that is assuming a Geological Disposal Facility opens on schedule in 2040. (9) Full response at: http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf
GDA84	Member of Public	No comment.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 7.
GDA95	People Against Wylfa B	Why do your documents fail to explain to the ten communities around potential nuclear sites how nuclear waste will be stored on site? It is well-documented that both new reactor designs hope to use high burn

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		up nuclear fuel, a far more intense fuel than the uranium currently used in British Energy and NDA reactors. It is also well-documented that the doubly hot and doubly radioactive waste which would be produced from the high burn up fuel would have to stay on the site of its production for 160 years or possibly even longer. Why do your documents not refer to the length of time the waste would have to be stored on site? Your documents also fail to explain whether potential nuclear sites would require a waste encapsulation plant, and whether the waste would be disposable in a geological disposal facility with an adequate safety case. As things stand at present, a geological disposal facility is nowhere near becoming a reality, with growing doubts as to the suitability of the only two areas to show an interest in providing a home for the nuclear waste burial dump. Because of the glaring omissions in your documents, the whole exercise should be restarted providing full details on all the hazards of high burn up nuclear fuel in possible new reactors. Full consideration should be given to its behaviour during a station's operation, and how the waste from it should be handled, stored and disposed. [Respondent has provided an article on high burn up fuel – available to see on our website.]
GDA96	Springfields Site Stakeholder Group	Both appear to cover the process well, but will depend on agreement being made regarding a Geological Disposal Facility (GDF).
GDA102	Waldringfield Parish Council	Paragraph 524 on the transportation of spent fuel (in 12.2) makes no mention of security measures to prevent terrorists or other organised criminals from obtaining this radioactive material, either by high-jacking the containers or breaking into them and stealing the contents. The spent fuel could then be used in a ‘dirty bomb'.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that spent fuel from a fleet of UK EPRs would be disposable in a suitably designed and located Geological Disposal Facility (GDF)), subject to a satisfactory demonstration that spent fuel can be stored safely for the necessary period of time without significant degradation. This is in accord with the evidence provided by the Requesting Parties. Prospective operators including NNB GenCo are already working with RWMD to progress key issues, including the minimum duration of interim storage prior to emplacement and optimisation of the GDF design for both legacy and new build spent fuel. We recognise the need for continued close working with the Requesting Party, the Radioactive Waste Management Directorate (RWMD) and the regulators as the design of the UK GDF develops.
GDA112	Blackwater Against New Nuclear Group	The respondent provided a document, available to see on our website. The following is an extract: ‘*Here, too, the regulators are concerned about disposability following long-term storage. Spent fuel will*

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		be managed on site pending its removal to the proposed national repository. The designers do not anticipate any new issues that 'challenge the fundamental disposability of the wastes and spent fuel expected to arise from operation' of either the AP 1000 or the UK EPR (p.100). However, the regulators stress that they expect to see well before any new nuclear stations begin operation some further information 'on the properties of high burn-up spent fuel following long term storage' (p.101). Among these properties are the longer cooling times required and the larger footprint high burn-up fuel may require both in storage and in disposal (Richards, 2008). *We are concerned at the lack of clarity and information on the issue of high burn-up spent fuel. The regulators 'recognise that detailed and definitive information may not be available until there is direct operational experience' but expect much earlier than that 'to see evidence of sufficient progress to provide reasonable confidence that any issues are likely to be manageable'. BANNG regards this response as totally inadequate and equivocal. It should be axiomatic that more than merely 'reasonable confidence' is necessary in the management of spent fuel prior to its creation.* ***BANNG believes that detailed design proposals for the management of spent fuel must be prepared and accepted before authorising the operation of new nuclear power stations. 'Reasonable confidence' in spent fuel management proposals is an inadequate requirement. The regulators must have full confidence in the proposals for safe management of spent fuel before proceeding to approve the designs.*** *There is also a lack of clarity about spent fuel management strategy. There is little specific information on conditioning, storage and transportation to a repository. Rather, a general outline of proposals is offered. The AP 1000 design envisages spent fuel assembly storage in a pool for up to 18 years followed by dry storage below ground. Spent fuel will remain in store for a period of up to 100 years enabling heat decay to a level acceptable for disposal. By contrast the UK EPR strategy appears to support 10 years initial pool storage followed by either wet interim pool storage or dry interim storage in metal casks or in purpose designed vaults. The variety of possibilities suggests that spent fuel management is at a rather rudimentary and provisional stage of development. There may also be other possibilities (not covered in the documents) such as central or regional stores which would raise issues of transportation, transhipment and siting.* ***BANNG recognises that the regulators are concerned about the disposability of spent fuel following interim storage. BANNG endorses this concern. However, this is not the only matter of concern. BANNG considers the whole section in the documents on spent fuel to be most unsatisfactory, unclear and provisional. We believe more detailed information, greater clarity and***

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		***fully justified plans on the management of spent fuel are required before the GDA process proceeds any further*.'**
GDA114	Shepperdine Against Nuclear Energy	The respondent provided a letter by e mail, available to see on our website. The following is an extract: **'*Reactor waste disposal*** *Our community group is deeply concerned about the lack of information and uncertainty surrounding the proposals for disposal of reactor waste. It is evident that neither the Government nor the applicants are yet able to state with clarity or confidence how the high level toxic reactor waste from these new high-capacity reactors will be disposed of safely and that the plans for a GDF are a long way from reality.* *Until the Government is able to properly demonstrate that these wastes can be disposed of safely there should be no further steps taken towards the development of new reactors. To do otherwise will, by default, impose the storage of this waste on the communities affected - a potentially hazardous situation which will last for an indefinite period that could run into many generations.* *It is completely unacceptable to expect the communities to store this waste on site without a certain and safe plan for both it's long term disposal and transportation, supported by a definite time scale for its provision and allocated funding in place.* *Furthermore it strikes us as foolhardy to envisage storing nuclear waste at all within a high level risk flood zone and we are at a loss to understand how the EA can even consider this suitable.* *We would also like to point out that the GDA documentation relating to waste disposal and storage is woefully inadequate; bearing in mind that this could be for many decades, this seems both irresponsible and dangerous*'
GDA119	Member of Public	The respondent provided a document, available to see on our website, the following is an extract: '*It is highly likely a waste repository will never be build. The stores should be designed to fulfil all the requirements on the assumption the High Level Waste/Spent Fuel will be on site permanently. To my mind, it is mere political expediency to say otherwise and I would deem it irresponsible to go forward under that speculation*'
GDA126	Sellafield Ltd	No comments
GDA127	Horizon Nuclear Power	Horizon notes that the regulators are continuing to review information about spent fuel disposability and that they have requested further information about long term storage. Horizon accepts that the Department of Energy and Climate Change (DECC) base case for managing and disposing of spent fuel

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		is practical but we are supporting industry work, commissioned by the Nuclear Industry Association (NIA), to optimise the strategy for disposing of both legacy and new-build wastes in the UK, including irradiated fuel. The NDA/RWMD will shortly be publishing its initial feasibility study of the issues.
GDA133	Nuclear Waste Advisory Associates	The respondent provided a document, available to see on our website, the following is an extract of the conclusions of that document: '*1. The EA Assessment Reports fail to fully analyse the NDA"s Disposability Assessment reports and the Requesting Parties responses. Instead they postpone dealing with outstanding disposability issues to some unspecified time in the future. This is unacceptable.* *2. The consultation documents fail to acknowledge other work by the EA which states that it is possible that an acceptable safety case for a GDF cannot be made.* *3. At present it is quite apparent the nuclear industry would not be able to dispose of new build reactor wastes safely. It would be wholly irresponsible to wait until such wastes are created to confirm this. Unless and until the nuclear industry are able to demonstrate that new reactor wastes could be disposed of safely there should be no further steps taken towards the development of new reactors.* *4. If the nuclear industry is not required to prove it has a safe disposal route for wastes until after the planned reactors are built, then a powerful financial momentum would be created towards allowing the reactors to operate – and so produce waste fuel for which there was no long term safe management route.* *5. NewBuild waste fuel requires on-site storage for one hundred years simply to allow it to cool down. Adding on the expected operating life of 60 years means that a NewBuild reactor site could end up as a waste site for at least 160 years. This means communities around new reactors might be expected to host a waste site for almost two centuries. In fact the rector site could possibly be a waste site indefinitely – if, as looks quite likely, it not possible to develop a safe disposal route for the wastes..* *6. The EA consultation leaves communities around nuclear sites with far too many uncertainties. As well as not knowing how long waste fuel might be stored on site, or what kind of a store would be used, they do not know whether they will be required to host a packaging facility, with its associated risks, or even an Intermediate Level Waste incinerator. Communities on transport routes do not know when waste may be transported through them. It is possible that a community may be asked to host a centralised storage and packaging facility at some point in the future. No indication is given over whether such a facility would be required, and if so where it would be. This means communities that might be affected by*

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		NewBuild wastes are not able to contribute to decisions that would affect them. *7. If a new build programme is much larger than around 6 new reactors (10GW), two sites for Geological Disposal Facilities are likely to be sought – doubling the risk to the UK population.*'
GDA135	Member of Public	See Q2.
GDA141	Welsh Assembly Government	Thank you for notifying the Welsh Assembly Government about the consultation on the Generic Design assessment for the two new designs of nuclear reactors being proposed for development in the UK. The Assembly Government remains concerned that the operation of the new nuclear power stations as currently proposed involves the on site storage of spent fuel for up to 100 years after its removal from the reactor. Together with the proposed operational life of the new reactors of up to 60 years this could mean spent fuel being stored on site for around 160 years before geological disposal. Other consultation papers have suggested that this time could be reduced by new technology, allowing the handling and disposal of hotter and more radioactive spent fuel than is currently envisaged, by some fuel being placed in the reactor for a shorter time and therefore being less radioactive and relatively cooler. There have also been proposals that spent fuel may be stored in central facilities. However these alternative arrangements all depend on future developments which have yet to take place and the Assembly Government can only respond on the current proposals which are as outlined above. Furthermore, in terms of protecting human health and the environment near the proposed new power stations, a total storage period of, say, 120 years is little different in practical terms from the 160 years currently envisaged. The Assembly Government is concerned as new nuclear power stations are proposed for Oldbury and Hinkley Point adjacent to Wales and at Wylfa. Clearly the GDA will have to ensure the highest standards of operational safety and radioactive discharges for each of the new nuclear power station designs proposed, together with other environmental protection issues. However the proposals for storing radioactive waste on site introduce a new element not currently found with the existing nuclear power stations at those sites. As well as ensuring the safety of human health and the environment from storing spent fuel for this very lengthy period, the GDA will need to ensure that the spent fuel store provides adequate protection from potential terrorist attack, arguably providing the same degree of protection as that provided for the main reactor containment. The Assembly Government would welcome reassurance about this matter, please.
GDA145	Institute of Mechanical Engineers	Response as for Question 2. Whilst the Institution fully supports the need for secure long term interim storage, as above, what reassurance is required for spent fuel disposal? Surely this fuel is almost

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		identical to Sizewell B.
GDA154	West Somerset Council and Sedgemoor District Council	The Consultation Document appears to address the various processes, and acknowledges (para 590) that much will depend on future developments. Proposals for Wet Storage described in Section 12.2 appear generally adequate, but must continue to be reviewed against the progress or otherwise of the MRWS process. The authorities' concerns relating to spent fuel generally reflect those expressed with regards to ILW in relation to GDF. While proposals associated with the reference case appear sound, these generally rely on delivery of the GDF. While EDF and AREVA's proposals are generally in line with Government aspirations for GDF, there is no guarantee that this can be delivered to programme, or that a suitable site can be identified. Our concerns therefore relate to the potential that in addition to the need for on-site storage of spent fuel for up to 100 years following removal from the reactor, removal from the site and disposal may not be guaranteed. We would therefore look for additional confidence that contingency plans are developed to account for this potential outcome, and that plans are communicated to local stakeholders to provide confidence that alternative disposal measures would be developed to ensure that continued on-site storage beyond this period would not represent liabilities to local areas. Furthermore, if required beyond this period, storage would not represent a risk to the safety and environment of local communities
GDA161	Somerset County Council	The respondent provided a document, available to see on our website, the following is an extract: **'*Spent Fuel Storage*** *As stated in section 7.2 of the consultation document, EDF propose a facility on site to store spent fuel for 'about 100 years before final disposal'. The Original Draft National Policy Statement (NPS) for Nuclear Power Generation in section 3.8.17 states that 'it is possible to envisage a scenario in which interim storage might be required for around 160 years from the start of the power stations operation'. The Revised Draft National Policy Statement for Nuclear Power Generation (EN-6) in section B.4.3 states that 'The NDA's current indicative timetable anticipates a Geological Disposal Facility being available to take spent fuel from new nuclear power stations from around 2030'. It also states that 'The Government recognises that interim storage on-site might be required beyond 2130, particularly in the event that a GDF is not available to take the waste'.* *The AREVA/EDF proposals should be updated to be consistent with the information provided in the Revised Draft Nuclear NPS. Additionally, the options for spent fuel storage on site are not made clear in the main Environment Agency Generic Design Assessment Consultation document. The AREVA/EDF*

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		proposals for spent fuel storage are only made clear in the background paper 'Pre-Construction Environment Report Chapter 6 – Discharges and Waste'. It is understood that AREVA/EDF proposes that intermediate level waste (ILW) and spent fuel will be stored in one or more of the following ways: ▪ *Interim spent fuel storage on site* ▪ *Interim spent fuel storage facility shared between several sites* ▪ *Interim spent fuel storage facility shared between several nuclear utilities* ▪ *Contractual arrangements with an industrial operator in the UK (such as the NDA) for long term storage of the fuel.* *Whilst SCC supports the principle of a new nuclear power station at Hinkley Point, it is not considered to be an appropriate location for a regional radioactive waste storage facility. This information is important to the community of Somerset who will be affected by the potential building of a new nuclear power station at Hinkley Point. Information regarding the proposed storage of spent fuel, which is a significant change to the way spent fuel is currently dealt with, should be made clear in the main consultation document*'
GDA166	Cumbria County Council	Spent fuel storage: The EPR GDA consultation document refers to spent fuel interim stores at each station being designed to be maintained or replaced to last for at least 100 years from when spent fuel is first emplaced in the store (para 175). However, the draft Nuclear National Policy Statement (NPS) assumes that spent fuel could be stored on the station sites for up to 160 years (para 3.8.17). The duration of interim storage of spent fuel is related to reactor lifetime and the period required for cooling prior to geological disposal. The figure of up to 160 years is based on a reactor lifetime of 60 years and a cooling period of up to 100 years for high "burn-up" spent fuel. Although the 100 year cooling period is based on conservative assumptions and could be considerably shorter, it is arguable that the approach in the GDA should be consistent with the 'conservative case' in the draft NPS. Spent fuel disposal: The EPR GDA consultation document does not contain an explicit assumption about whether there is a robust programme for identifying a suitable site for a GDF for disposal of new build spent fuel. The Government's aspiration is to find a single site for a GDF that would enable legacy and new build higher activity waste (including spent fuel) to be disposed of in the same facility. There are, however, a range of risks and uncertainties that may prevent this. For example, the capacity of suitable host rock at a preferred site may not be sufficient for new build spent fuel, or any volunteer communities may not agree to the disposal of new build spent fuel. It is arguable that the GDA process should

ID	Member of Public / Company / Organisation	Question 7 - Do you have any views or comments on our preliminary conclusions on spent fuel?
		explicitly address the implications of these potential scenarios for the interim management of spent fuel.

3.8 Monitoring of disposals of radioactive waste (Qn 8)

ID	Member of Public / Company / Organisation	Question 8 - Do you have any views or comments on our preliminary conclusions on monitoring of disposals of radioactive waste?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I believe that a thorough and open system of monitoring and reporting the disposal of radioactive waste is very desirable to instil confidence in residents around the site and over a wider area.
GDA38	Ingleby Barwick Town Council	Sampling must be conducted on a regular time basis and procedures adopted to see that any problems are tackled on a planned basis. I am surprised at your monitoring of Strontium 90 and Plutonium 239 and 240, especially in the early life of the reactor.
GDA51	Maldon Town Council	We note that no assessment has been carried out to date. UK EPR not provided any detailed information on solid waste.
GDA56	Member of Public	Radioactive waste would not be created if the power stations were not an option
GDA66	Member of Public	No
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree that the use of BAT to monitor gaseous and liquid disposals from the EPR has not been demonstrated and accordingly the reservations expressed are supported. Further submissions from AREVA/EDF and evaluation by the EA will be required before this issue is resolved.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA84	Member of Public	I agree that a lot more detail require on monitoring location.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 8.
GDA96	Springfields Site Stakeholder Group	It would appear that further work needs to be carried out on both designs to ensure BAT are implemented, including any site specific issues.
GDA106	NNB Genco	We support the Environment Agency's conclusion that monitoring of radioactive disposals is an essential element in demonstrating good environmental performance and effective application of BAT to the design, construction, commissioning and operation of UK EPR facilities. We recognise the obligation on prospective operators, including NNB GenCo, to ensure that BAT is being applied. We also recognise that radiation metrology is a constantly advancing field. The methods used must clearly represent BAT,

ID	Member of Public / Company / Organisation	Question 8 - Do you have any views or comments on our preliminary conclusions on monitoring of disposals of radioactive waste?
		which for example will require proportional sampling. But given the timescale on which UK EPRs will actually be commissioned and radioactive disposals will therefore begin, it is important to ensure that decisions on equipment and techniques are not made prematurely. This would foreclose the benefits from future developments. Thus it is important that prospective operators remain able to make the right decisions on appropriate monitoring techniques at the right time. These could also then comply with, and reflect developments in, the latest guidance and standards (such as the Environment Agency's Monitoring Certification Scheme MCERTS and its planned extension).
GDA126	Sellafield Ltd	The EA could not conclude that the proposal utilises BAT. We would not see this as a major difficulty given that the technological needs for sampling and for sample analysis are so well understood.
GDA127	Horizon Nuclear Power	We note the EA's conclusion and recognise that the monitoring of radioactive disposals will be addressed in more detail during site specific permitting. We would, however, also note that information on monitoring techniques provided during site specific permitting will need to be appropriate to the development of the design at the time of the application. It is Horizon's view that initial information will relate more to principles and strategy. As the programme develops, and we get closer to construction of the relevant parts of the plant, further details on specific techniques and equipment will become available.
GDA129	Committee on Medical Aspects of Radiation in the Environment	The respondent provided a document, available to see on our website, the following is an extract: ***'Chapter 13: Monitoring*** *We agree with the EA that insufficient information or analysis has been currently conducted to ensure the application of BAT by both submissions***'**
GDA145	Institute of Mechanical Engineers	The Institution would not expect a Statement of Design Acceptability to be issued without a specification of the generic arrangements for monitoring disposals of radioactive waste. The Institution agree with the conclusions here, EDF & AREVA need to do more in depth studies here. This equipment is vital to reassure the public and gain acceptance of future stations.
GDA154	West Somerset Council and Sedgemoor District Council	We have no detailed comments in regards to the end-of-pipe monitoring described in Section 13 of the Consultation Document. We are however concerned that an effective monitoring, management and intervention programme is established to consider the potential cumulative effects on the surrounding receptors and ensure that findings are clearly and concisely communicated to the local communities surrounding reactor sites.
GDA157	Stop Hinkley	We are very concerned to read that the EPR design does not include what the EA considers to be the

ID	Member of Public / Company / Organisation	Question 8 - Do you have any views or comments on our preliminary conclusions on monitoring of disposals of radioactive waste?
		best techniques to measure and assess radioactive disposals (paragraphs 551 to 557) and so agree with the conclusion in 558 (a) that BAT has not been demonstrated in respect of gaseous emissions. This applies equally to aqueous emissions as outlined in paragraph 566. We are also concerned that insufficient information has been supplied by EdF/Areva on sampling lines and achieving representative samples. We are greatly discouraged to read that these areas seem to be a low priority for EdF

3.9 Impact of radioactive discharges (Qn 9)

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I do not question the logic and thoroughness of the methods you use to reach these conclusions.
GDA38	Ingleby Barwick Town Council	The figures given assume only one reactor working on a site, but at Hartlepool will there not be two working, if only for a short time? How do the figures stack up then? Satisfied that the possible impact of radioactive discharges has been given a satisfactory investigation at this stage. The final impact can only be assessed when the new reactor is in operation.
GDA51	Maldon Town Council	We note that radioactive discharges from a New Station are within limits but a detailed site specific assessment of the radiological impact will be required. UK EPR we note that an assumption of coastal sites only.
GDA56	Member of Public	Radioactive waste would not be created if the power stations were not an option.
GDA58	Member of Public	Use of PC-Cream is appropriate for the GDA and the dose predictions seem reasonable as far as I can tell. Predicted doses from routine operations are of very low radiological significance, so the conclusions seem appropriate.
GDA66	Member of Public	See Storm van Leeuwen's report on Nuclear Health Risks. See: http://nfznsc.gn.apc.org/docs/briefings/A194_(NB79)_NUCLEAR-FREE LOCAL AUTHORITIES_Briefing_79_Radiation_health_risks.pdf
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree that at this stage the use of generic site data in evaluating impacts is appropriate and that the results indicate that the anticipated impacts are within limits and are acceptable. More detailed evaluation of impacts can be undertaken at the site specific permitting stage.
GDA76	Health & Safety Executive, Nuclear Directorate	See our comments on Question 1.
GDA84	Member of Public	These are fine.
GDA88	Health Protection Agency	The Health Protection Agency believes that the general approach and the methodology adopted by the Environment Agency in assessing the radiological impact of radioactive discharges are reasonable. The

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
		HPA is therefore confident that the results of this assessment are sound and robust; HPA agrees with the preliminary conclusions reached by the EA. The consultation document states that both EDF/AREVA and the Environment Agency used the software application PC CREAM 98 to calculate the impact of radioactive discharges for stage 3 of the assessment. The Health Protection Agency notes that an updated version of this software, PC CREAM 08, was released in 2009. The Health Protection Agency does not believe that there would be any benefit in redoing these assessments using the newer version of PC CREAM, but recommends that site specific assessments should be carried out using PC CREAM 08, rather than PC CREAM 98. Section 14.7 mentions that the International Atomic Energy Agency (IAEA) has set a level for collective doses of less than 1 man Sv per year of discharge as part of their criteria for discharges not requiring regulatory control (paragraph 616). The Health Protection Agency notes that the IAEA recommends that practices can be exempted from regulatory control only if both the criterion for collective doses and the criterion for individual dose (effective dose expected to a member of the public must be of the order of 10 µSv y -1 or less) are met (International Basic Safety Standards for Protection Against Ionizing Radiation and for the Safety of Radiation Sources, IAEA Safety Series No. 115, 1996; IAEA Safety Guide on the Regulatory Control of Radioactive Discharges to the Environment, IAEA Safety Standards Series No. WS-G-2.3, 2000; IAEA Safety Guide on the Application of the Concepts of Exclusion, Exemption and Clearance, IAEA Safety Standards Series No. RS-G-1.7, 2004). In any case, it is the opinion of the HPA that a nuclear power plant should be subject to regulatory control regardless of whether dose criteria for exemption are met or not. The Health Protection Agency notes that the Environment Agency, together with other agencies, has produced guidance on the principles for the assessment of doses to the public which may arise from planned radioactive discharges to the environment and believes that the consultation document should refer to this guidance, particularly on the assessment of collective doses. The HPA also emphasizes that it is important that both individual and collective doses are calculated in an assessment of the impact of radioactive discharges carried out for regulatory purposes.
GDA96	Springfields Site Stakeholder Group	The dose assessments appear to be acceptable as the modern designs will ensure lower discharges than those of existing reactors.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that the generic assessment is well within the relevant dose constraints, including the more stringent recommendations from the Health Protection Agency. To put this in context, the impact of radioactive discharges on the public is a very small fraction

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
		of the average natural background in the UK. We recognise that any operator, including NNB GenCo, that applies for an environmental permit will need to provide a site-specific assessment to support this. We would expect the results of any site-specific assessments to be bounded by those in the GDA. We would expect regulatory judgements to be informed by the site specific impacts.
GDA112	Blackwater Against New Nuclear Group	We come now to those generic issues which may have differential impacts affecting some sites but not others. It is not sufficient simply to leave all the details to specific site evaluation. Generic principles that are developed without regard to some general site characteristics may be too unspecific. Conversely, attempts to make generic principles fit every specific eventuality would obviously destroy the concept of the GDA. It is important that the GDA ensures that generic design features are generally capable of being implemented at all sites. For this reason the GDA offers the concept of a 'generic site' for which an assessment of the impact of radioactive discharges can be made. The generic site is defined by the regulators as follows: 'The characteristics of the generic site should be appropriate to sites in the UK where nuclear power stations might be built and will define the "envelope" of applicability of any statement of design acceptability that we might issue' (p.108). The idea is to confine the development of generic principles within the constraints of what are 'realistic' siting options. The two proposed designs under consideration have approached the generic site issue differently. Westinghouse have proposed a definition based on information from five coastal sites – Dungeness, Hartlepool, Heysham, Hinkley and Sizewell. From these they compile data on population, exposed groups, habitats, meteorology, terrestrial environment, coastal environment and non-human species to provide an indication of radiological impact. The Areva EPR proposal for the generic site assumes a coastal site and includes data on population and exposed groups and habitats, non-human species, meteorology, terrestrial environment and coastal environment. We note that, in both cases, the regulators consider the definitions 'are appropriate to use in its assessment of radiological impact at the GDA stage' (p.110). There are two issues of concern here. 1. *Exclusion of non-coastal sites.* One is that by confining the generic site to coastal locations all other types of location are excluded. This would exclude sites on large rivers such as Owston Ferry on the River Trent which was identified as a potentially suitable site for new nuclear in the Atkins study of alternative sites (2009). 2. *Exclusion of Estuarial Locations.* By focusing on coastal sites, the generic site does not include

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
		estuarial sites where impacts may be more severe through cooling water discharge impacting on marine ecosystems. Impacts on the terrestrial environment are also likely to be different to those experienced in coastal locations. It is noted that the AP 1000 generic site is derived from five coastal sites and does not include either Bradwell or Oldbury, estuarial locations with quite different characteristics to coastal sites. **BANNG considers the concept of 'generic site' focusing on coastal locations as derived for the GDA to be inadequate in that it is inapplicable to potential alternative sites to those listed in the NPS or to listed sites that are located on estuaries. The regulators should consider whether to require a generic site that encompasses impacts in non-coastal locations. Alternatively, if the generic sites as defined by the designers continue to be deemed appropriate, the GDA should recommend that non-coastal and estuarial sites should be dropped from further consideration.**
GDA123	L2 Business Consulting Ltd	What is calculated dose rate at the boundary fence? How will these dose calculations be used in practice?
GDA126	Sellafield Ltd	With respect to Table 14.2, the simple addition of constituent parts to arrive at a total dose is misleading. Different pathways will have different critical groups and doses cannot simply be added as has been done in this table. With respect to Table 14.5 and paragraph 621, it is now recognised that to draw conclusions from collective doses as small as these is not possible.
GDA127	Horizon Nuclear Power	Horizon is pleased to note the EA's conclusions that at the generic site and with gaseous and aqueous discharges at the proposed limit values: The prospective dose to humans is well below the relevant dose constraint; The discharges would be unlikely to pose a risk to non-human species, and would not adversely affect the integrity of conservation sites. Horizon recognises the requirement to undertake site specific dose assessments at the site specific permitting stage.
GDA129	Committee on Medical Aspects of Radiation in the Environment (COMARE)	We agree with the overall conclusions. The evidence base and the assessment methodology is more advanced for humans than it is for non-humans (or wildlife). Therefore, whilst the conclusions of low predicted doses for non humans appear reasonable, the confidence in the assessments is probably lower. For instance, the maximum predicted dose rates are, in some cases, for reference organism groups for which few, if any, transfer or effects

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
		data exist at present. Also, there is some potential confusion for the reader from the use of both the Erica screening value of 10 µSv/h and the EA value of 40 µSv/h. The use of a consistent methodology and criteria for the assessments for both designs is desirable for the future, and confidence in the assessment methodology and its underpinning science should be considered during detailed site specific assessments.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions. We feel this was a good section demonstrating that the plant will meet all requirements by a good margin and reassuring to see such good agreement between the Westinghouse data and the regulator's independently calculated data. The Institution feels assured that EDF & AREVA have assessed fully the impact of radioactive discharges and all dose-rates are well below 40 µGy h^{-1}.
GDA154	West Somerset Council and Sedgemoor District Council	The EA conclusion (para 603) that 'all the doses EDF and AREVA assessed are below the dose constraint for members of the public of 300 µSv y^{-1} and the dose constraint recommended by HPA for new build of 150 µSv y^{-1}'. Our primary observation with regards to the impact of radioactive discharges is that while Section 14 of the Consultation document describes an assessment based on generic site characteristics and exposed groups, it acknowledges that detailed site-specific assessment of the radiological impact will be required on any site where UK EPR is proposed. We would however question the statement in paragraph 578 that 'at present, there are no specific sites for which detailed site-specific assessment can be made'. While the merit of considering specific sites in the context of the Generic Design Assessment process is unclear, proposals are clearly in development for an AREVA UK EPR powered nuclear power station at Hinkley Point in Somerset. While an application for Development Consent Order has not yet been made, EDF have consulted on their preferred proposals and consideration of radiological impacts should be commensurate with expectations of the Environment Agency
GDA157	Stop Hinkley	The Health Impact section of the consultation document does not even attempt to describe the current debate over the effects of low level radiation on communities near nuclear power stations. There is no attempt to show both sides of the argument over the suitability of the ICRP (International Commission on Radiological Protection) model to chronic ingestion of radioactive particles near a nuclear power station. ICRP bases its risk model on the epidemiology following the Hiroshima explosion. Many argue that a single blast of radiation is not equivalent to chronic ingestion over perhaps years of low level radiation and extrapolation is not justified. An ICRP official has also recently stated that their model will not stand up in the case of a serious accident at a nuclear power station.

ID	Member of Public / Company / Organisation	Question 9 - Do you have any views or comments on our preliminary conclusions on the impact of radioactive discharges?
		The consultation also uses the term ‘dose’ extensively and without reference to the CERRIE committee’s reservations below about the uncertainty surrounding the term regarding health impacts. This extract from the Low Level Radiation Campaign website demonstrates the problem concerning the risk model: [the extract may be seen on the full Stop Hinkley document available on our website]

3.10 Abstraction of water (Qn 10)

ID	Member of Public / Company / Organisation	Question 10 - Do you have any views or comments on our preliminary conclusions on the abstraction of water?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I recognise the great importance of constantly monitoring the quality of abstracted water.
GDA38	Ingleby Barwick Town Council	It would be difficult to prevent damage to invertebrates on filter screens as organisms are so small. The operators can only do their best. As far as is reported at other power stations, little negative effect occurs on marine life (especially in the cold North Sea at Hartlepool).
GDA40	Communities Against Nuclear Expansion	Along with many other consequences of grouping clusters of reactors together, we are particularly concerned that town (fresh) water requirements for these EPRs are either going to put under threat local supplies to the public, or necessitate desalination, a costly and environmentally damaging process. As an example here at Sizewell the town water requirement for two EPRs plus Sizewell B would be 2600 cubic metres per day, equivalent to the needs of over 16000 people. We believe that there must be an understanding of the potential conflict between demand for public consumption and industry and a very early consideration of the consequences of any plans. We believe that this early consideration is vital particularly as it affects the economy of the whole project.
GDA51	Maldon Town Council	We note that abstraction of water only from the open sea, and intake design to be site specific.
GDA66	Member of Public	No
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We have no additional observations to make on the abstraction of sea water.
GDA76	Health & Safety Executive, Nuclear Directorate	Questions 10 - 14 are outside our regulatory interests. The Nuclear Directorate therefore has no comments to make in relation to these questions
GDA84	Member of Public	No.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 10. The HPA notes that this question relates to issues associated with water abstraction and usage and that public health implications were not identified.
GDA90	Seafish	Seafish generally has little direct interest in issues such as reactor design but, historically, there have

ID	Member of Public / Company / Organisation	Question 10 - Do you have any views or comments on our preliminary conclusions on the abstraction of water?
		been problems with fish kills associated with cooling water intakes and thermal pollution from effluent water. The latter may well assume greater significance in an era when aquatic ecosystems are under stress, and hence vulnerable, through the impacts of climate change. The consultation material I've seen makes no mention of these specific issues. I remember that the CEGB undertook many studies to mitigate these sorts of problems and we seek reassurance that the same diligence will be applied to the new designs when the time comes to set site-specific operating conditions.
GDA96	Springfields Site Stakeholder Group	Agree with the documents conclusions
GDA106	NNB Genco	NNB GenCo's proposed UK EPR sites will abstract cooling water from the open sea. In this light we agree with the Environment Agency's conclusion that abstraction licences will not be required. The cooling water intakes at these sites will be designed on a site-specific basis in order to minimise impacts on the local marine environment.
GDA112	Blackwater Against New Nuclear Group	We note the statement: 'We have assumed for GDA that the cooling water intake will be from the open sea and that the abstraction will not require licensing (p.121). We also note the conclusion in the GDA consultation documents that the 'proposal to abstract cooling water only from the open sea is unlikely to require an abstraction licence from us' (p.121). It is clear that the designs under consideration for the GDA apply only to sites where cooling water is abstracted from and discharged into the open sea. They do not apply to estuarial locations such as Bradwell which is listed as a potential site in the NPS. As we have pointed out in our response on the NPS consultation, abstraction of cooling water from a shallow estuary is a very different proposition indeed from abstraction from the open sea: 'A new EPR station of 1.65GW would require a daily intake of 6.22 million tons of cooling water, more than three times the volume required by the former Magnox station on the Blackwater estuary. This volume represents 10% of the total estuary volume of exchange water each tide. Temperature rises of up to 10^0C are forecast on the south shore in the vicinity of the power station, with a 1^0C to 2^0C increase elsewhere. This rise in temperature in the River Blackwater is likely to have a much greater impact on its ecosystem than was the case with the previous station. The larger cooling system will also have to be treated with more biocides to prevent fouling of pipework. These biocides, such as chlorine, sub-react in water to form more complex and potent biocides with increased half-life. Such biocides are likely to further affect the ecosystem on a larger scale than before. The increased volumes and velocity of water will also cause greater scouring of the riverbed, resulting in much larger dead areas than occurred with

ID	Member of Public / Company / Organisation	Question 10 - Do you have any views or comments on our preliminary conclusions on the abstraction of water?
		the previous smaller Magnox station. It takes ten days to totally refresh the water in the estuary, a very low refresh rate when compared to the open sea. This low refresh rate, together with one tenth of the estuary daily tidal volume passing through the reactor, means that the incidence of damage from cooling water circulation would be far greater than in the open sea, and far more significant than previously experienced. The damage to the marine environment and the fishing and oyster industries dependent upon it is likely to be extensive. It is unlikely that the impacts on the marine ecology could be successfully mitigated' (BANNG, 2010b, p.3). It is unlikely that the Blackwater estuary has sufficient capacity to supply cooling water for even one station. If further new power stations are proposed it is likely that cooling towers will be necessary. This would introduce new design issues and potential impacts which are not considered in the GDA analysis. **The GDA fails to take account of the issues of cooling water abstraction in estuarial locations and its likely impacts. It also fails to consider the possibility of cooling towers and their potential impacts in locations where there is insufficient water for straight through cooling. BANNG considers the designs considered in the GDA are inadequate in their application to estuarial locations and that the regulators should indicate that such locations should be removed from the list of potential sites.**
GDA126	Sellafield Ltd	No comments.
GDA127	Horizon Nuclear Power	We welcome the EA's statement that the abstraction of cooling water from the open sea is unlikely to require an abstraction licence. We note the comments on debris return in abstracted seawater and will seek any consents that might be required for this during site-specific permitting. We acknowledge the EAs comments on the seawater intake design and expect such structures to incorporate the appropriate site-specific mitigation measures.
GDA143	Countryside Council For Wales	· We note the assumption of an open coast situation for both the AP1000 and UK EPR assessments and the consequential conclusion that abstraction is unlikely to require a licence from the Environment Agency. It is our view that making this assumption when a number of proposed new nuclear build stations are likely not to be located in open coast situations has not realised the full opportunity of this process. We recommend that consideration is given to alternative generic locations before decisions are made on the acceptability of the designs and that the GDA needs to take account of existing HRA and SEA findings in this context. We have concern that direct cooling is considered as generic BAT (best available technique) and that this may have been the primary influence in the assumption of an open coast location. In our view certain site specific factors such as the scale of environmental impacts and

ID	Member of Public / Company / Organisation	Question 10 - Do you have any views or comments on our preliminary conclusions on the abstraction of water?
		the ability to apply best practice in the build of cooling water intake structures strongly undermine the application of a generic BAT for cooling. We are disappointed that there is not more comparative detail on the direct cooling used by the two designs. It is our view that the entrapment (entrainment and impingement) issues and biocide use are significant environmental impacts and therefore very important considerations at this stage. While an individual application will of course provide more detail, we would have preferred the generic assessment to provide more information here and for these factors to be considered as part of the design acceptability process. · We note the conclusions that sea water abstraction in an open coast situation is unlikely to require an abstraction licence from the Environment Agency. We would appreciate further clarity on whom the Competent Authority would be for this activity.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions.
GDA154	West Somerset Council and Sedgemoor District Council	Accepting that abstraction of seawater in itself may not be an issue for consideration by the Environment Agency we share the Agency's concern with regards to the potential effects of cooling water intakes on marine ecology. Accepting the recognition of the abundance of Natura 2000 sites which could potentially be affected by new nuclear power stations (para 656), the Environment Agency should also take into consideration the potential for entrainment to affect qualifying species, and the relevance of Habitats Regulations Assessments at the site.
GDA157	Stop Hinkley	Once the EPR power station is operating, large numbers of fish and other marine species will be killed as millions of litres of water are sucked into the new power station's cooling water intake. This will happen either by what is described as "impingement" – getting caught in the mesh filters at the entrance to the cooling system – or by "entrainment" – passing through the filters and then dying from a range of stress factors, including "mechanical, hydraulic, pressure, temperature and chemical related stressors". According to EdF's Environmental Appraisal on the Hinkley proposal, Volume 2 (Table 19.25), the annual predicted losses of "juvenile fish" as a result of entrainment will amount to almost 7.5 million individuals. This includes shrimps, sprats, whiting, prawns, sole, bass, herring, cod and other species. Other large numbers fish will be killed by impingement. The company accepts that the effect could be "significant" on the particular species European eel, river lamprey and sea lamprey.

ID	Member of Public / Company / Organisation	Question 10 - Do you have any views or comments on our preliminary conclusions on the abstraction of water?
		It is hard to see how any mitigation measures can easily stop these species from being caught in the filters which defend against their entering and fouling the power station's turbine generators, or subsequently dying as they pass further into the pipe network. EdF also accepts that marine species are likely to be affected by the raised temperature of the sea water resulting from heated water returning to the sea from the power station, especially if both Hinkley B and C stations were operating together
GDA165	Suffolk Coastal District Council	The site specific impacts of cooling water abstraction from the sea and the impacts on coastal morphology and marine life.

3.11 Discharges of non-radioactive substances to water (Qn 11)

ID	Member of Public / Company / Organisation	Question 11 - Do you have any views or comments on our preliminary conclusions on discharges of non-radioactive substances to water?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I recognise the importance of this aspect of management of nuclear plants.
GDA38	Ingleby Barwick Town Council	Modern effluent plants that I operated are able to reduce the contents of suspended solids, harmful metals etc. without much trouble. By choosing biocides carefully, as I did and monitoring their dosing, problems should be rare. These are good alternatives to hydrazine so that particular chemicals could be eliminated if so desired.
GDA40	Communities Against Nuclear Expansion	Marine cooling of two new reactors added to the existing Sizewell B outfall may raise sea temperatures to a level which is unacceptable, with potential for untold damage to the ecology, particularly if desalination is needed. Any modelling of the plume must therefore allow for two reactors and not just one. We note too that in France river-based reactors have had to be switched off during a recent heatwave due to lack of cooling capacity, further cause for concern for any river or estuary based reactors.
GDA51	Maldon Town Council	We note that non-radioactive substances to water to return to sea ok. However waste water from drains or sanitation systems would not be permitted untreated. It is noted that design for this treatment has not been submitted, neither has the environmental impact assessment based on dispersal modelling been submitted.
GDA66	Member of Public	No
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree that the ‘generic' discharges of non radioactive substances are acceptable and note that precise figures will be subject to further consideration at the site specific application stage.
GDA76	Health & Safety Executive, Nuclear Directorate	Questions 10 - 14 are outside our regulatory interests. The Nuclear Directorate therefore has no comments to make in relation to these questions.
GDA82	Nuclear-Free Local Authorities	Information from the nuclear industry on the ‘disposal' of waste from new reactors is available in several reports. (20, 21, 22) However, at Section 3.3 of the EA assessment reports on the disposability of ILW and spent fuel, a number of unspecified issues are referred to that the EA has raised with the nuclear industry. Neither the issues - nor the industry response is made available to the Public. The Agency

ID	Member of Public / Company / Organisation	Question 11 - Do you have any views or comments on our preliminary conclusions on discharges of non-radioactive substances to water?
		states that it recognises these issues will have to be addressed at some unspecified point in the future, but that in general they consider plans for dealing with them are adequate. In the NUCLEAR-FREE LOCAL AUTHORITIES view, this kind of ‘pretend' consultation is unacceptable. It makes it difficult to fully respond to the consultation without knowing this important information - what are the ‘unspecified issues’? To predict the contamination of water or gas that could leak form a nuclear disposal facility, the chemical characteristics and surroundings of the radioactive atoms must be known. However, inventory information set out in the NDA ‘Disposability Assessment' reports (23) is limited to information on the ‘atom type' (the ‘isotopes') [1] alone - not the characteristics and chemical surrounding of these atoms. The critical importance of this type of information may be appreciated by comparing the solubility of carbon in a diamond and carbon in sugar. In one chemical form the carbon will not dissolve at all - whilst in the other form the carbon is completely soluble. Although there is some mention in the Disposability Assessments of the presence of materials such concrete and cellulose that would affect the chemical environment, to all intents and purposes, the information required is simply absent. Therefore, there is no way in which the NDA would be able to realistically predict how contaminated the leaks for a nuclear dump would be. This means their risk calculations do not reflect the reality. The EA has set a limit on the risk that may be caused by the burial of radioactive wastes of 10 -6 yr -1 (i.e. one person in a million per year contracting a fatal cancer, a non-fatal cancer or inherited genetic defect as a result of radiation exposure). (24) In comparison the NDA calculates the dose from the spent fuel arising from 6 new EPR reactors (almost 10GW) would be more than half this total risk. (25) As the Agency points out: "... this does not leave a large margin to the regulatory risk guidance level ". (26) The (November 2009) Draft " Nuclear National Policy Statement " (27) proposed ten reactors sites, each with up to two reactors. Thus, in addition to current wastes, the wastes from up to 20 new reactors would need to be considered. The assumption that the nuclear industry may meet the regulatory target of a ‘one in a million' risk simply by beginning the construction of an additional disposal facility cannot be legitimate. A second dump would result in double the original dose - even if this was spread geographically. It should also be noted that a large number of problems have been identified with the NDA's disposal project indicating that the NDA dose figures represent an extreme underestimate. For example, in March 2010 Nuclear Waste Advisory Associates (NWAA) compiled a register of current technical issues which remain to be resolved if a technical case for radioactive waste disposal is to be made. Over one hundred issues were identified. (28) The EA simply states that: " At the time of disposal it will need to be

ID	Member of Public / Company / Organisation	Question 11 - Do you have any views or comments on our preliminary conclusions on discharges of non-radioactive substances to water?
		confirmed by the GDF [disposal facility] licensee that the performance of the GDF with its whole inventory will be consistent with our risk guidance level ". (29) At present it is quite apparent the nuclear industry would not be able to 'dispose' of new build reactor wastes safely. It would be wholly irresponsible to wait until such wastes are created to confirm this. Unless and until the nuclear industry are able to demonstrate that new reactor wastes could be disposed of safely there should be no further steps taken towards the development of new reactors. Full response at: http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf
GDA84	Member of Public	No.
GDA88	Health Protection Agency	The Environment Agency indicates that work to date has identified that predicted discharges of certain non-radioactive substances are less than 1% of its environmental quality standards at the point of discharge. The Environment Agency has commissioned a study to further understand the range and quality of chemicals discharges from power stations. The Health Protection Agency notes the caveats associated with assessment of the potential impacts associated with emissions to water at the generic design stage. Assessments to date are limited (in terms of the range of contaminants assessed and their likely concentrations) and the HPA recommends that the EA continues to evaluate the potential impacts of emissions to water on an ongoing basis as and when more information becomes available. Emissions to water should not be permitted to lead to breaches of health-based standards, nor environmental quality standards as discussed in the EA consultation document.
GDA96	Springfields Site Stakeholder Group	Appears acceptable assuming the any detailed environmental impact assessment is agreed by the regulators, including any site specific issues.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that it should be able to permit the discharge of non-radioactive substances from UK EPRs. At its proposed sites, NNB GenCo will take site specific issues into account when applying for an Environmental Permit under Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2010. The applications will include detailed environmental impact assessments based on extensive environmental studies and modelling.
GDA126	Sellafield Ltd	No comments.
GDA127	Horizon Nuclear Power	We welcome the EA's comments that it would be able to permit the discharges of non-radioactive substances to water. Horizon acknowledges that many of the factors surrounding the discharge of non-radioactive substances will be site specific and will be addressed as part of the Environmental Impact

ID	Member of Public / Company / Organisation	Question 11 - Do you have any views or comments on our preliminary conclusions on discharges of non-radioactive substances to water?
		Assessment (EIA) and Environmental Permit (EP) application submissions.
GDA143	Countryside Council For Wales	We note the comparative difference in the outfall temperatures of the two designs (AP1000 with14-15 degree temperature rise in outfall, UK EPR with 12 degrees). This suggests to us that in temperature sensitive locations the AP1000 may not be suitable unless alternative cooling methods are used. We recommend that this issue is taken into account in reaching a decision on the acceptability of the designs
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions. We note that it is good to see a demonstration of the stations low impact on the environment from non-nuclear sources.
GDA154	West Somerset Council and Sedgemoor District Council	Recognition of the contributing effects of heat and biocide in cooling water as pollution from cooling water discharges is welcome. Particularly so is also recognition in this context of the importance of the Habitats Regulations and the affect of cooling water discharge with regards to the Habitats Regulations. While we agree that Habitats Regulations Assessment is not directly underpinning to the GDA process, we welcome discussion of the importance of it at an early stage, and the Environment Agency expectation for increasingly rigorous assessment and the possible need for detailed dispersion modelling to support this. We further agree with the Environment Agency decision not to assess the ecological impact assessment of a representative site conducted by EDF and AREVA. Inconclusive and limited findings may otherwise affect the confidence afforded to conclusive and evidence based site assessment required of the Habitats Regulations Assessments. The authorities further recognise the importance of full and robust assessment of the impact of discharge of cooling water at elevated temperatures to marine and estuarine water bodies. We fully support the requirement (para 685) that ‘due to the highly localised data requirements of dispersion modelling, a detailed study will be required for a site-specific application for a discharge permit’ and also suggest that this also needs to ensure that thermal plume discharge modelling takes full account of all modes of operation (including redundancy of cooling water infrastructure) and also adjacent thermal outfalls where, for example, new reactors are constructed adjacent or within the possible mixing zone of established reactors

3.12 Pollution prevention for non-radioactive substances (Qn 12)

ID	Member of Public / Company / Organisation	Question 12 - Do you have any views or comments on our preliminary conclusions on pollution prevention for non-radioactive substances?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	No comment.
GDA38	Ingleby Barwick Town Council	There should be no need to discharge to groundwater therefore procedures must be in place to combat any spillage. Spillage should be directed to the effluent plant when any correction can be applied. Beware the hardness of the water at Hartlepool is 450ppm and the town water supply is all taken from bore holes .
GDA51	Maldon Town Council	We note your conclusion on pollution on groundwater.
GDA66	Member of Public	No.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We have no observations to make on this aspect.
GDA76	Health & Safety Executive, Nuclear Directorate	Questions 10 - 14 are outside our regulatory interests. The Nuclear Directorate therefore has no comments to make in relation to these questions
GDA84	Member of Public	These are ok.
GDA88	Health Protection Agency	The consultation document states that EDF and AREVA claim that there are no direct or indirect releases to groundwater. If this is the case then the Health Protection Agency considers that the EA's conclusion a) (the site of a UK EPR should not need to be permitted by us for a discharge to groundwater under the Environmental Permitting Regulations 2010') is reasonable. In terms of the EA's conclusion b) (pollution prevention techniques used in the UK EPR are adequate to prevent any leaks or spills entering groundwater) the EA should ensure that the design is compliant with the containment standards specified in legislation and best practice guidance. Where containment issues are deferred until the site-specific design stage, the HPA is a consultee to bespoke environmental permit applications and will provide further comment on a case-by-case basis.

ID	Member of Public / Company / Organisation	Question 12 - Do you have any views or comments on our preliminary conclusions on pollution prevention for non-radioactive substances?
		The Health Protection Agency supports the EA statement that the borehole network discussed in section 8.3 of the consultation document (for monitoring of radioactive contamination) should also be used to monitor for a range of non-radioactive substances to be agreed at the site-specific stage.
GDA96	Springfields Site Stakeholder Group	Agree with the documents conclusions, assuming that BAT are used to ensure no leaks or spills are allowed to enter the groundwater.
GDA106	NNB Genco	We agree that UK EPRs will not require an Environmental Permit to discharge to groundwater, since the pollution prevention techniques they use are adequate to prevent discharges of relevant substances to groundwater. At its proposed sites, NNB GenCo will apply pollution prevention techniques that meet current standards (both statutory and guidance) and will be adequate to prevent leaks and spills contaminating land and /or entering groundwater.
GDA127	Horizon Nuclear Power	We welcome the response provided by the EA on Pollution Prevention for non-radioactive substances.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions and agree a nuclear site is probably providing better prevention than most non-nuclear sites.

3.13 Environmental Permitting Regulations 2010 (EPR 10) Schedule 1 activities (Qn 13)

ID	Member of Public / Company / Organisation	Question 13 - Do you have any views or comments on our preliminary conclusions on Environmental Permitting Regulations 2010 (EPR 10) Schedule 1 activities?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	No comment.
GDA38	Ingleby Barwick Town Council	We must ensure that the latest engines are used which are more efficient and are less noisy. Also adequate bunding of fuel tanks must be employed.
GDA51	Maldon Town Council	We agree with conclusion and note that waste strategy during construction is not mentioned.
GDA56	Member of Public	None.
GDA66	Member of Public	No.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree that EPR 10 permitting should only be required for the emergency diesel generators.
GDA76	Health & Safety Executive, Nuclear Directorate	See the response to Question 10.
GDA84	Member of Public	I agree the conclusions.
GDA88	Health Protection Agency	The Health Protection Agency has no comment on the EA's conclusion beyond noting that technology will be subject to BAT assessment and supporting the use of site-specific modelling to demonstrate compliance with air quality objectives. These should include objectives for all pollutants i.e. including those pollutants not discussed within the consultation document (where the focus is on oxides of nitrogen and oxides of sulphur). The HPA notes that part of this question relates to interpretation of the Environmental Permitting Regulations 2010 and is a regulatory issue.
GDA96	Springfields Site Stakeholder Group	Agree with the documents conclusions.
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that the emergency diesel generators at UK EPRs should be acceptable for permitting. At its proposed sites, NNB GenCo will take site specific issues into account when applying for an Environmental Permit under Schedule 1 of the Environmental Permitting

ID	Member of Public / Company / Organisation	Question 13 - Do you have any views or comments on our preliminary conclusions on Environmental Permitting Regulations 2010 (EPR 10) Schedule 1 activities?
		(England and Wales) Regulations 2010. The applications will include a demonstration of BAT and site specific modelling to demonstrate compliance with air quality objectives.
GDA127	Horizon Nuclear Power	We welcome the EA's conclusions in looking at the new 2010 Environmental Permitting Regulations in relation to the UK EPR design. We acknowledge that the standby generators will require an EP and note that site specific permitting will require a BAT assessment and site specific air quality modelling for the chosen diesel engine design. We note that the standby generators are unlikely to require continuous monitoring.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions. Although there are several areas for consideration at the site specific stage we do not expect them to cause an issue with the Environmental Permitting Regulations 2010.
GDA154	West Somerset Council and Sedgemoor District Council	The authorities concerns in relation to non-radioactive polluting substances relate primarily to the potential effects on noise, air quality and waste, as a result of construction and operation of reactors. With regards to noise, we are concerned at the potential levels of noise that may be associated with some aspects of design. In particular, operation of diesel generators (para 701(h)) we fully agree that intermittent noise, as would be associated with generator tests and use, can have its own particular issues. In addition to the suggested requirement for demonstrating BAT, at a local level the proximity of potential receptors and the effect of intermittent noise, in the context of ambient noise levels, should also be taken into consideration. With regards to air quality, we also agree that use of diesel generators should also ensure compliance with Environmental Quality Standards. (para 701(l)). With regards to the discussion of the screening approach taken by the EA (para 702) we fully agree with the importance of consideration of air quality at sensitive receptors as part of the Environmental Permit application. We also consider that in addition to consideration of compliance with Environmental Quality Standards, assessment should also reflect the local ambient air quality of sensitive receptors, as both nuclear power stations and sensitive reactors would generally be found in rural location, away from areas of high traffic flow and industrial inputs. We also welcome the suggestion of commitment to a certified environmental management process such as ISO 14001:2004, as a means of management of environmental impacts and demonstrating compliance to local stakeholders. While not assessed at GDA, paragraph 705 rightly identifies the importance of Natura 2000 sites and their vulnerability to pollution from non-radioactive sources. We note that pollution prevention from non-

ID	Member of Public / Company / Organisation	Question 13 - Do you have any views or comments on our preliminary conclusions on Environmental Permitting Regulations 2010 (EPR 10) Schedule 1 activities?
		radioactive substances during construction of the reactors is not expressly considered within Section 15.3. We would expect the Environment Agency to require full satisfaction that construction activities would similarly not be associated with significant environmental effects on local communities and sensitive receptors. Construction activities would also be required to take full account of the Habitats Regulations.

3.14 Non-radioactive waste (Qn 14)

ID	Member of Public / Company / Organisation	Question 14 - Do you have any views or comments on our preliminary conclusions on non-radioactive waste?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	It is very important to have a system in which the public is confident in the effectiveness of the system to distinguish between non-radioactive and radioactive waste.
GDA38	Ingleby Barwick Town Council	One assumes that the waste handling will be executed by a specialist reputable company - there are some who are not!!! If so, all should be well.
GDA51	Maldon Town Council	We agree with conclusion and note that waste strategy during construction is not mentioned although UK EPR do acknowledge some types of waste they think will be found during construction.
GDA56	Member of Public	None.
GDA66	Member of Public	No.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree with the GDA conclusions on waste hierarchy and re-use.
GDA76	Health & Safety Executive, Nuclear Directorate	See the response to Question 10.
GDA84	Member of Public	No comment.
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 14.
GDA96	Springfields Site Stakeholder Group	We agree that any waste generated during construction should be included within the waste hierarchy strategy and covered within site-specific cases.
GDA106	NNB Genco	We welcome the Environment Agency's conclusions that Requesting Party's strategy for non-radioactive waste from the UK EPR is consistent with the waste hierarchy and with the objective that waste is recovered or disposed of without endangering human health and without using processes or methods that could harm the environment. NNB GenCo will consistently apply the principles of the waste hierarchy throughout the construction, operation and decommissioning of its proposed UK EPRs, so as to meet the objectives of the Waste Framework Directive. We will meet the requirements of the

ID	Member of Public / Company / Organisation	Question 14 - Do you have any views or comments on our preliminary conclusions on non-radioactive waste?
		Environmental Protection Act 1990 to avoid environmental pollution or harm to human health and take reasonable measures to prevent waste escaping.
GDA126	Sellafield Ltd	No comments.
GDA127	Horizon Nuclear Power	We welcome the comments made by the EA on the Management of Non-Radioactive Waste.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions.
GDA154	West Somerset Council and Sedgemoor District Council	The authorities are in general agreement with the principle of management of non-radioactive waste in accordance with the waste hierarchy. While we recognise the approach advocated in paragraph 716 for minimisation through re-use, recycling and energy recovery ahead of landfilling, we consider that at on a site-specific basis, the feasibility of this approach will also rely on the availability of waste management capacity, the location of facilities, and presence of a supply chain. Noting the discussion of construction waste provided in paragraph 710 and 712, we also note that discussion in the consultation document focuses on operational waste management above construction waste management, which is expected to result in significantly higher volumes of waste arisings

3.15 Control of Major Accident Hazards (COMAH) substances (Qn 15)

ID	Member of Public / Company / Organisation	Question 15 - Do you have any views or comments on our preliminary conclusions on Control of Major Accident Hazards (COMAH) substances?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	No comment.
GDA38	Ingleby Barwick Town Council	I question why they need to use hydrazine when there are other much safer oxygen scavengers available?
GDA51	Maldon Town Council	We agree with conclusion.
GDA56	Member of Public	Proper consultation needs to be made with all members of the public in the region of a power station, and as a nuclear meltdown could affect the entire country, a big COMAH consultation is required. With true HSE theory, remove the risk in the first place (don't build a nuclear site)
GDA66	Member of Public	No.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	We agree that the EPR would be a ‘lower tier' installation.
GDA76	Health & Safety Executive, Nuclear Directorate	As stated in section 15.6 of the consultation document, HSE and the Environment Agency are Joint Competent Authorities for sites in England and Wales which fall under the COMAH Regulations. Although HSE has not yet considered the likely COMAH status of a power station based on the generic EPR design, the Environment Agency's conclusion that such an installation may be a lower-tier COMAH site appears to be reasonable.
GDA84	Member of Public	Very happy with this.
GDA88	Health Protection Agency	The Health Protection Agency notes that only a qualitative risk assessment has been undertaken for a major accident to the environmental arising due to an accident involving hydrazine. The Health Protection Agency concurs that the operator will need to have a more detailed risk assessment available before site operations commence and notes that the competent authorities (Environment Agency and Health and Safety Executive) should ensure that any installation is compliant with the requirements of the COMAH Regulations. The Health Protection Agency notes that the consultation document states that the HSE is responsible

ID	Member of Public / Company / Organisation	Question 15 - Do you have any views or comments on our preliminary conclusions on Control of Major Accident Hazards (COMAH) substances?
		for assessing matters relating to impacts on people and recommends that the EA seeks opinion from the HSE with respect to their conclusion c) (the operator should be able to demonstrate that all measures necessary to prevent major accidents and limit their consequences to people and the environment have been taken for a UK EPR installation) above.
GDA96	Springfields Site Stakeholder Group	Agree with the documents conclusions.
GDA106	NNB Genco	We agree with the Environment Agency's conclusion that a UK EPR will be a COMAH lower tier installation. We expect that NNB GenCo's proposed twin UK EPR units will also be COMAH lower tier installations. However, NNB GenCo will assess and confirm this position on a site-by-site basis. In accord with the COMAH regulations, we will undertake risk assessment and put in place appropriate measures to prevent accidents and limit their consequences to people and the environment.
GDA126	Sellafield Ltd	No comments.
GDA127	Horizon Nuclear Power	Horizon notes the EA's conclusions.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions.

3.16 Overall acceptability of the design (Qn 16)

ID	Member of Public / Company / Organisation	Question 16 - Do you have any views or comments on our preliminary conclusions on the acceptability of the design?
GDA5	Member of Public	Don't build the station in the first place.
GDA25	Member of Public	I accept your conclusions. (Chapter 16)
GDA38	Ingleby Barwick Town Council	None apart from those already made.
GDA51	Maldon Town Council	We agree overall preliminary comments and acceptability of designs submitted subject to our points raised in this questionnaire.
GDA56	Member of Public	They are an eyesore and a terrorist target.
GDA66	Member of Public	The acceptability of the design should await the successful commissioning of the first EPR at Olkiluoto in Finland. Unfortunately this will delay the GDA until 2013 or 2014. Moreover, It appears that EdF is abandoning the EPR and will submit its own design for the UK. This will presumably delay a renewed GDA until 2015 or three years after the new designs are submitted for assessment.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	The evaluation process appears to us to have been thorough and robust, the conclusions drawn are sound and most of the reservations noted should be easily resolved. The two issues which, in our opinion, could delay progress are related to the disposability of long term stored ILW and long term stored spent fuel - both of which are generic rather than design specific or site specific issues. Uncertainty around decommissioning strategy also presents an issue which is likely to undermine arguments to secure public acceptability.
GDA76	Health & Safety Executive, Nuclear Directorate	Based on our understanding of the Environment Agency's regulatory processes and its GDA findings, and on our assessment so far of the generic design of the UK EPR, HSE/ND considers the Agency's conclusions on the acceptability of the design are reasonable.
GDA84	Member of Public	No.
GDA88	Health Protection Agency	The Health Protection Agency concurs that detailed site-specific assessments of the potential impacts of discharges to the environment will be required at the permit application stage (e.g. detailed environmental impact assessment based on dispersion modelling). The Health Protection Agency is a consultee to bespoke environmental permit applications and will provide further comment regarding all aspects of the impact of these discharges to environment on a case-by-case basis.

ID	Member of Public / Company / Organisation	Question 16 - Do you have any views or comments on our preliminary conclusions on the acceptability of the design?
GDA96	Springfields Site Stakeholder Group	Agree with the documents conclusions.
GDA102	Waldringfield Parish Council	The section on the design of the reactor (4) makes no mention of security measures to prevent terrorists or other organised criminals from attacking the reactor and related facilities, resulting in the release of nuclear fuel or other radioactive material into the environment, widespread radioactive contamination and large scale evacuations from the surrounding areas. For example, if a terrorist flew a plane loaded with high explosives into the reactor core, would the reactor design be robust enough to withstand this, and prevent the pollution hazards described above?
GDA106	NNB Genco	We welcome the Environment Agency's conclusion that, pending consultation, it could issue an interim Statement of Design Acceptability for the UK EPR confirming its suitability for project specific environmental permitting. We recognise there are some issues that require further work through the final stages of GDA or in site specific permitting. This is not unexpected at the present stage of the regulatory assessment process. We are confident that these issues can be addressed in a timely way. NNB GenCo will work with the Requesting Parties and the Environment Agency to bring them to a satisfactory conclusion. We recommend that the Environment Agency's conclusion takes the form of an explicit statement that the design is acceptable, based on its assessment of the information provided in the GDA process and subject only to resolution of these specific outstanding issues.
GDA125	Greater Manchester Socialist Environment Resources Association (SERA)	The technical detail of the submission seems to have eclipsed a fundamental concern about public risk. The summary shows that EDF has presented no documentation in their submission on the impact of new build on the local environment at any of the possible sites. Nor have they made a resolution plan for decommissioning after the 50+ year life span of the plant. (GDA Issues p144) These are inter-generational responsibilities on the companies involved and are made less easy to resolve because the Deep Geological Repository for decommissioned waste has not yet been identified for existing legacy waste, nor the location or ownership of new build waste resolved. As these issues are essential to the well being of local and national communities, through which nuclear materials and waste will travel, we consider that it is NOT appropriate to issue an interim statement on design acceptability of UK EPR
GDA126	Sellafield Ltd	No comments.
GDA127	Horizon Nuclear Power	Based on the information and assessments presented in the consultation document, and, given the wealth, quality and depth of information provided by EDF and AREVA during GDA, Horizon believes that the EA has or will have the information required to enable it to issue a final Statement of Design Acceptability (SODA) at the conclusion of the GDA process. We therefore expect the GDA Issues to be

ID	Member of Public / Company / Organisation	Question 16 - Do you have any views or comments on our preliminary conclusions on the acceptability of the design?
		satisfactorily resolved during GDA and Other Issues to be resolved either during GDA or site permitting.
GDA145	Institute of Mechanical Engineers	The Institution agrees with the consultation document conclusions and that subject to a few caveats the UK EPR Generic Design is acceptable.

3.17 Any other comments on our assessment (Qn 17)

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
GDA5	Member of Public	Don't build the station in the first place.
GDA18	Member of Public	As a Fellow of both the Royal Academy of Engineering and the Institution of Mechanical Engineers, I give a positive response to getting on with building as many nuclear power stations as possible. World demand for nuclear power is rising rapidly and all main contractors for these have lengthening order books. Unless we ensure decisions are taken soon the UK will be at the back of a very long queue.
GDA19	Member of Public	Before a third nuclear power station is built at Hinkley Point, can you confirm: a) that all the radioactive waste generated by Hinkley A & B in their active lives has been safely treated and poses no threat to future generations or to the environment, and b) that the obsolete hulks of A & B will be demolished and the site cleared?
GDA20	Member of Public	The Nuclear Installations Inspectorate considered flawed the control and instrumental system in EDF's French European Pressurised Reactor in 2009 and another design fault was recently highlighted where it responds to changes in electricity demand. Nevertheless EDF are proposing to dig a gigantic hole in preparation for the foundations of the two massive reactors it hopes to build at Hinkley Point and the creation of a huge jetty, destroying up to 500 acres of species-rich woodland, hedgerows and fields in the process and the removal of a million cubic metres of soil and rock - all this before their planning submission to the IPC now delayed until December. The NII will not pronounce judgement on the EDF's preferred design until June 2011. EDF has said it will 'restore' the site if it doesn't get permission. Has it got a magic wand? This is planning chaos. This coalition government is speaking with cloven tongues on the construction of the new wave of nuclear power stations throughout the country. On the one hand it will place a national planning statement before the House for ratification so that new build can go ahead. At the same time the Liberal Democrats spokesman will speak against the statement and Lib-Dem MPs will abstain. From within his own Department the Secretary of State, who has expressed his opposition to the promotion of nuclear power, has found one of his own ministers following the 'Government' line. Clearly with such dissension in the camp nothing short of a public enquiry should resolve the issue where independent scientists, academics and local experts on the ground, not interested parties who have subsidised the local authorities, can decide on all aspects of the question, including such matters as the disposal of nuclear waste which the previous Labour Government 'consultation' failed to consider.

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
		Too many local residents' health and lives have been ruined already by the reckless way the existing tranche of nuclear power stations have been managed without adding a further threat of hazardous effluence and stockpiles of waste materials which no-one has yet decided how to dispose of. We are condemning our descendants to live in a nuclear wilderness.
GDA21	Member of Public	We have sent you separate emails demonstrating that neither the UK EPR nor the AP1000 are safe and should be ruled out for ever. We have sent you a nuclear reading list of all the published scientific studies demonstrating that nuclear power in the UK, Europe and the US has a record of disastrous health damage to its employees and members of the public. There is no need for new nuclear in the UK (attached DECC forecasts for 2020). There will be no nuclear waste/spent fuel facilities in the UK until 2040 at the earliest.
GDA23	Member of Public	1. If the costs of the proposed designs are similar, the option should be that which can be built most quickly in order to reduce carbon emissions and dependence on overseas fuel sources. 2. Again, if costs are similar, the design selected should be that which in its development and construction provides most employment of UK (and even better local) labour. 3. The general public, even after researching the issue, can hardly be expected to comment on the technical and scientific issues involved, and one would hope that such decisions are made by those with longstanding experience and knowledge of the industry without recourse to public opinion and political whims.
GDA25	Member of Public	No comment.
GDA28	Joint Nature Conservation Committee	Thank you for your letter of 25.06.10 regarding the Hinkley Point Nuclear Power Development. JNCC co-ordinates nature conservation advice at a UK level and advises UK Government on scientific and policy matters relating to nature conservation internationally. Within each UK country the separate statutory bodies are responsible for nature and landscape conservation these being: Natural England (NE), Countryside Council for Wales (CCW), Scottish Natural Heritage (SNH) and the Council for Nature Conservation and the Countryside Northern Ireland (CNCCNI). JNCC has responsibility for the provision of nature conservation advice in the offshore area. ‘Offshore' is defined as beyond 12 nautical miles (nm) from the coastline to the extent of the United Kingdom Continental Shelf (UKCS). Within territorial limits (<12 nm) nature conservation advice is the responsibility of the relevant country agencies. This development proposal is not located within the offshore area, does not have any potential offshore nature conservation issues and is not concerned with nature conservation

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
		at a UK level, therefore JNCC does not have any comments to make on the consultation.
GDA30	Member of Public	The sooner real action is taken to build new stations the better. We must not delay. It seems as if all discussions will take too long. Remember the miners strike - do we want electricity cuts? I was an Engineer with MEB and remember well the chaos caused. Lets get going!
GDA32	Member of Public	In response to your advertisement in my local paper, I write to say I completely support any move to build more nuclear power stations in this country and especially Somerset. Had the last Government not been so completely useless they would have built at least ten nuclear power stations and if they had done so we should not now be buying our power from France and even Russia. Instead we are left with a mish-mash of rubbish about wind farms, wave power, solar energy and so on which are all, for the huge expense and problems involved, virtually useless. This country needs power in huge quantities at just the right times and in my view only nuclear energy can meet this ever rising demand. For the record, I believe the AP1000 is marginally the better unit, based on r/p/h, reliability and cost of building.
GDA35	Burneside Parish Council	There does not seem to be an option for those who don't want either
GDA36	Member of Public	The choice between the UK EPR and the AP1000 designs depends on detailed technical assessment and price. I cannot usefully comment on these aspects without sight of the detailed tender documents. The main concern is the time for construction of the power station. This seems to be of prime importance. If new power stations are to avoid the 'lights going out' it will be necessary to provide new non-intermittent low carbon power stations to replace the ageing Magnox and AGR generators very quickly. It will not be sufficient to provide large numbers of wind generators supplemented by open-circuit gas turbines as stand-by/spinning reserve. I doubt if 'smart meters' designed to cut off some items of equipment and so balance the demand to meet the supply when the wind drops will provide politically acceptable.
GDA38	Ingleby Barwick Town Council	I believe at this early stage we should put in a request that the site should be made as pleasing to the eye as possible. We should include green space and tree planting. It improves the image of nuclear power to the public. fact which may be true or not that the French are involved in making rules for the European Union and then not being keen to carry them out. We should therefore be very careful in what they promise for a nuclear power plant where safety and environment issues are paramount.
GDA40	Communities Against Nuclear Expansion	We wish to make an early observation about the remit of the consultation being carried out by the Agency and trust that our observations will enable the fullest possible understanding of the environmental impact. Our main concern, which we cannot find addressed in the comprehensive documents, is that the current proposals for construction of new EPRs at Hinkley and here at Sizewell are for two unit developments.

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
		We refer here to a statement made during a planning overview update meeting held on 7th May 2009 between EdF and our local authority, Suffolk Coastal District Council. This had been one of a series of meetings held since 2007 between EdF, its predecessor British Energy, and local authorities and others. The information has been supplied under the Environmental Information Regulations to our organisation Communities Against Nuclear Expansion. Quoting directly from the minutes relating to the SSA nomination it states " EDF estimated that impacts (and socio-economic benefits) of a single unit development could be more than half of a two unit development, with consequences for economic viability." This would appear to indicate that a single EPR would be too costly and unviable in this location and would indicate that a two unit EPR is necessary. The consequence of this is of course that the environmental impacts would be doubled up. Along with many other consequences of grouping clusters of reactors together, we are particularly concerned that town (fresh) water requirements for these EPRs are either going to put under threat local supplies to the public, or necessitate desalination, a costly and environmentally damaging process. As an example here at Sizewell the town water requirement for two EPRs plus Sizewell B would be 2600 cubic metres per day equivalent to the needs of over 16000 people. We believe that there must be an understanding of the potential conflict between demand for public consumption and industry and a very early consideration of the consequences of any plans. We believe that this early consideration is vital, particularly as it affects the economy of the whole project. Marine cooling of two new reactors added to the existing Sizewell B outfall may raise sea temperatures to a level which is unacceptable, with potential for untold damage to the ecology, particularly if desalination is needed. Any modelling of the plume must therefore allow for two reactors and not just one. We note too that in France river based reactors have had to be switched off during a recent heatwave due to lack of cooling capacity, further cause for concern for any river or estuary based reactors. To conclude, whilst we accept that the Agency will have the opportunity to authorise town water and marine extractions, we believe it is fundamental that if two unit developments are to be the norm that the generic design assessment should also be done on a two unit basis and should additionally note the presence of other reactors in the vicinity. We trust that the Agency will investigate these matters further and we await your response with interest.
GDA42	Member of Public	I am not sure how to gain access the actual designs, but I am fairly sure that they will involve some sort of cooling towers and a certain amount of structure above ground. One of the things I think the general public feel is that an enormous power station sat on the side of a river is a blight on the countryside. Therefore ideally one wants to camouflage the structure or make a feature of it? People don't object to

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
		castles on the edge of Scottish locks for example. Have you considered either cladding the concrete structure in another material? Although I realise one does not want to incur further costs maintaining what is just decorative. Alternatively can you colour the concrete? There are through coloured renders, can the same be done for concrete? Or finally before there was CGI say 10-15 years ago, there were artists who worked in film production who painted giant back drops- although this idea would need repainting, and probably works best if there is a landscape behind the structure for it to be painted in to. It would be Ok for looking from England across the Severn to the hills in Wales/ Forest of Dean but possibly more difficult from the other side. Personally I know it's unusual, but I quite like the power stations - here is a disused one at Vikhog in Southern Sweden on the shore opposite where we went on holiday (.
GDA41	Member of Public	I live a few miles from Hinkley Point where EDF proposes to extend the existing nuclear capacity. I understand there was a query recently re: the designs of their reactors being built in Finland and to be used here. I am also unhappy about the proposal to store waste on site (accidents? Terrorism?). This development would cause much disruption to the area (swamped with traffic, hostels, etc.). We need a new road (to be brief, to the East, directly to Hinkley Point (unlikely!). In these hard times, real and (word illegible) concerns will be lost in the interests of employment, investment etc.
GDA44	Member of Public	There is limited understanding of how materials behave over 60 years (corrosion/degradation). This is new territory. It's no longer meaningful to sign off the design on day 1. Need to monitor performance of the structure. "Getability" needs to be built into the design now. Have to be able to monitor during its lifetime. Insufficient account taken of human factors. I cite the 3 mile island incident (following discussions with the gentleman who chaired the inquiry) where the dominant factor was found to be human factors. Specifically, insufficient skills of those who were operating the control room. Couldn't see any proper specifications to address human factors for training/management/supervision in our GDA documents.
GDA46	Arkleholme with Cawood Parish Council	Following a recent Parish Council meeting the Councillors would like to offer their support for construction of a 3rd power station at Heysham in Lancashire.
GDA48	Communities Against Nuclear Expansion	COMMUNITIES AGAINST NUCLEAR EXPANSION will be commenting more fully after we have received the kind of technical advice that the seriousness of the issues surrounding new nuclear power deserves, but would wish to write to both the Environment Agency and Ministers on our initial thoughts and the "procedural" issues that the release of this document at this stage of its production raises.

ID	Member of Public / Company / Organisation	Question 17 - Do you have any overall views or comments to make on our assessment, not covered by previous questions?
		COMMUNITIES AGAINST NUCLEAR EXPANSION believe that we cannot leave large parts of our nuclear energy programme undecided just to suit timescales set artificially by government under pressure from the nuclear industry. A number of documents which are critical to the assessment of nuclear new build are incomplete or subject to further consideration. We are yet to receive a final copy of the papers justifying the use of new processes emitting ionising radiation, a requirement under EU law. We are yet to receive a copy for consultation of the revised National Nuclear Policy Statement, which will not happen until autumn. We are yet to receive a paper from COMARE answering recent concerns on the safety of radiation, papers which we expect to address the issues raised on the dangers of living in proximity to nuclear reactors as pointed out in reports from both Germany and the USA. We have no proven safe way of disposing of nuclear waste and as a result have to store it for timescales beyond the human imagination, at least ten thousand and maybe up to two hundred thousand years. We are now receiving an incomplete statement on the design of the proposed reactors. This is unsatisfactory. Our initial reading of the papers indicates that we are yet to receive answers to questions posed as long ago as June 2009. These include weaknesses in the command and control systems of the EPR and how the fatigue in the material used for coolant and pressuriser systems in the current range of PWR's will be addressed. We are concerned that the safety of the proposed reactors is being considered in isolation and the impact of several reactors operating in close proximity is not fully considered. We will return to these in our future submission. In spite of all of these uncertainties, we still are proceeding with this technology and entrenching its use by potentially including it in the same subsidy regimes as truly renewable energy sources which are cheaper and much safer and over the whole generating cycle emit much lower amounts of carbon dioxide. Although some of these issues are substantially beyond the remit of the producers of the GDA's themselves, it seems impossible to make a considered response to the GDA unless the issues mentioned have been addressed. The only reason why the government would pursue such a precipitate and foolhardy action would be if they believed that without nuclear energy we would fail to meet our environmental targets or that the "lights would go out". There is the strongest evidence, in papers delivered to the Energy and Climate Change Committee by the Sustainable Energy Partnership among others, that the assumptions on energy usage and conservation made in the National Policy Statements are incorrect and that we do not need nuclear power. In this case, we question the need for such haste in publishing Generic Design Assessments which are incomplete in so many ways. Even if the rapid issue of

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		the GDA was desirable for reasons more than just political expediency, there is the question as to whether the items which have been remitted for further consideration can actually be isolated from the design as a whole. In engineering terms it is regarded as dangerous to make assumptions about the interdependency of parts of systems, so we do wonder what advantage is achieved by taking significant parts of the design from a more holistic process. We appreciate to eat an elephant you need to cut it into smaller pieces, but once this is done you no longer have an elephant. We have received written assurances that the remitted items will be open to full public scrutiny and that matters of public concern would not be kept private for reasons of commercial confidentiality. In this case would it not have been cheaper to have conducted a single review of the GDA when complete rather than two separate reviews likely to cover the same ground? In other words, especially during times of financial austerity, would it not be cheaper to do things properly? We regard the process of deciding whether we accept new nuclear power as part of our energy mix as a series of assertions which are masquerading as facts. Although it may be said that the decision on principle was made in the 2008 White Paper, a number of so called "facts" which were published at the time have been challenged, either during the consultation or subsequently, and proven to be incorrect. There is substantial evidence that the work of Dr David Mackay, which influenced the previous government's thinking and which concluded that we cannot meet our energy targets without nuclear did not take account of a number of factors in favour of renewable energy, such as the incentives delivered by small scale community generators which would give much greater energy efficiency. The cost of nuclear energy quoted in the White Paper has increased almost four fold in two years. EPR reactors at Flamanville and Olkiluoto have yet to be completed and have been criticised for the safety of their control systems. Recent opinion polls show that Finland, from going to a country with a strong majority in favour of the increased use of nuclear power, now has a majority against and only 44% in favour. We regard the GDA process itself as a smokescreen, which may deliver some confidence to the industry that it may meet regulatory approval at some point, but which do nothing to reassure the people affected by new nuclear reactors in terms of the actual impact on their life and the environment if they are to be built. All of these factors make the issue of these documents at this time irrelevant to the communities having to live through the threat of new nuclear power. We call upon the EA and its partners to accept that these papers are incomplete and not needed at this time, and to withdraw then from consultation until other documents which affect their completeness and relevance are available.

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GDA50	Member of Public	The building should be designed so that rotary drills can be used to insert the piles. I understand these are larger, and fewer piles are required than when using noisy impact-driven piles, but that the buildings have to be designed to utilise them. In this day and age, it is not acceptable to have the repetitive noise of impact-driven piles being inserted day after day for the number of years that it takes to build the power station. People come here to enjoy the sound of the sea on a peaceful coastline. When Sizewell B was constructed the noise of pile driving could be heard from beyond Dunwich to Thorpeness (which does not leave much quiet coast in this holiday area) as well as in Leiston.
GDA51	Maldon Town Council	No mention of plant construction transportation and its impact on local settlements, in the vicinity of any proposed site? Neither is their any mention on where the construction site workforce is to be housed, especially if they are relatively remote coastal sites? Again no mention of transportation of work force? What impact on the local economy, would the local Shop/Post Office need additional help?
GDA54	Dept of Agriculture, Belfast	QUALITY ASSURANCE BRANCH - An examination of the Departments records show that none of the lands as outlined in the map, which accompanied your request, are subject to the terms of a notice served relating to Potato Cyst Nematode (PCN) or Potato Wart Disease (PWD). Therefore there are no restrictions in so far as the Plant Health Order (Northern Ireland) 2006 is concerned on the movement of soil or other material from these land RIVERS AGENCY. Nil comments to make. COUNTRYSIDE MANAGEMENT BRANCH - We have no comments to make. THE FOREST SERVICE - No comments to make. THE FISHERIES DIVISION - Thank you for the correspondence in relation to the above proposal. Fisheries Division would not be able to comment on the design of the nuclear power plant. We may however want to comment on any discharge into the Irish Sea when the exact location has been confirmed and Fisheries Division contacted.
GDA63	English Heritage	The heritage significance of places derives not only from their physical presence, but also from other attributes including their relationship with their surroundings, particularly their setting. This principle is enshrined in legislation (Planning (Listed Buildings and Conservation Areas) Act 1990, sections 16(2) and 66(1)) and in national planning policy through Planning Policy Statement 5: Planning for the Historic Environment . PPS5, in paragraph HE8.1, states that: ‘ The effect of an application on the significance of such a heritage asset or its setting is a material consideration in determining the application ' (emphasis added).

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		Our reason for providing comment to this consultation is the possible impact of new nuclear power plants on the setting of heritage assets. Intelligent and sensitive design can greatly reduce the impact of a new structure on the local historic environment (see Historic Environment Planning Practice Guide , paragraph 121) and we would urge that this is a consideration in the design of new nuclear power plants. We believe that this is particularly important given the lengthy life-spans of the proposed structures and that they may well be placed in sensitive locations (i.e. have a significant impact on the local landscape, being viewed from considerable distances). It is worth emphasising we are not advocating a marked departure from previous approaches. Some of the first generation nuclear plants had a high degree of architectural and landscape input. In particular we would point to Trawsfynydd power station in Gwynedd which was designed by Sir Basil Spence, architect of Coventry Cathedral, with garden designer Dame Sylvia Crowe as landscape consultant
GDA56	Member of Public	I am clearly anti-nuclear.
GDA58	Member of Public	Past radiation doses from routine operations of nuclear facilities around the world have been very low, so (given the improved design of reactors), it is not surprising that the GDA predicts low doses from routine releases. I strongly support the proposed new generation of nuclear power stations, but I'm surprised that this consultation doesn't appear to consider accident scenarios, where doses could be more significant. Why have the EA and HSE not included a risk assessment considering the (I believe, extremely low) possibility of accidents in the consultation? Or have I missed the documents on this?
GDA66	Member of Public	No.
GDA67	Nuclear Technology Subject Group of the Institution of Chemical Engineers	Thank you for the opportunity to be involved in the process and to comment on the findings so far. IChemE agrees with the Environment Agency's preliminary findings and notes the major unresolved issues around decommissioning and spent fuel disposal alongside 11 minor design issues that are highlighted in the report. Nonetheless we feel that all of these issues are resolvable provided clear goals are set for the vendors. Further R&D is required to address the spent fuel issue and this will require a commitment to significant and sustained investment. IChemE recognises that the path to new nuclear build will require a concerted stakeholder relationship building campaign, not just within the communities around the proposed sites, but more widely among a doubtful UK public. In the current difficult economic climate the anticipated cuts in government agency communication and

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		PR budgets may seriously hamper efforts to secure public support. The professional engineering institutions can assist here.
GDA73	Braystones Residents	The respondent has provided comments as an attached letter.
GDA76	Health & Safety Executive, Nuclear Directorate	HSE/ND has no additional comments to make on the Environment Agency's assessment findings as described in the Consultation documentation.
GDA78	Member of Public	I am most concerned with the safety of nuclear power stations and have expressed this fear several times, by writing to newspapers in the area and the Hon William Hague (who passed it to Malcolm Wicks, the Power Minister).Â I have enclosed copies of some of these letters. I was under the impression the Government had taken the same view and not build any more in this country, but the subject has once again risen its ugly head and is being seriously considered once again. You will see that contrary to popular belief, the power stations are a positive menace to this small island and any major accident could render it uninhabitable. Please don't tell me that an accident is impossible; I will quote Windscale, Long Mile Island, and Chernobyl, and the recent near accident at Sizewell A on June 11th 2009 (BBC 4 news, 7 am) when, if it had not been discovered, would have resulted in evacuating the population in the vicinity of the power station (up to 20 kms radius) resulting in the surrounding land being unusable. [Additional response details on attached document.]
GDA80	Nuclear Legacy Advisory Forum (NuLeAF)	Potential GDA Issues - It is understood that the potential GDA issues do not involve fundamental concerns, but are based on the EA's requirement for a more evidence based approach. The EA anticipates that the Resolution Plans currently in preparation for each of the potential GDA issues will set out how AREAV/EDF and Westinghouse will meet this requirement. As far as we are aware, a commitment to publish the Resolution Plans has not been given. We would like to suggest that the Resolution Plans be published, so that stakeholders can see how potential GDA issues will be addressed. See full response at: http://www.nuleaf.org.uk/nuleaf/documents/Comments_on_EA_GDA_NuLeAF_4_October_2010.pdf
GDA82	Nuclear-Free Local Authorities	[The Respondent provided a document as response - we have summarised this above, there are further waste disposal issues in their paragraphs 12 - 14.] See http://www.nuclearpolicy.info/docs/consultations/NUCLEAR-FREE LOCAL AUTHORITIES_response_to_EA_GDA_consultation.pdf

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GDA84	Member of Public	Overall, a very professional, thorough competent report. I have to say that it has been necessary to raise far less issues than in the case with Westinghouse.
GDA86	Fylde Borough Council	Fylde Borough Council has an interest in the future of the nuclear industry on two levels. Firstly, we are located, on the north-west coast, within reasonable proximity to a number of the sites identified as potential locations for new nuclear build, Heysham in particular. On this basis we are concerned to ensure that all safety and environmental protection matters associated with such developments are adequately considered and addressed by the regulating bodies. We note that the most common issues of concern identified by the Agency relate to nuclear waste handling and waste disposal. These are also of concern to the Fylde communities and we would expect the Agency to ensure that the generic designs of new nuclear power stations are developed in such a way as to ensure, firstly, the most efficient use of fuel, secondly, that containment arrangements are effective for the lifetime of the new facilities and thirdly, that the licensees will provide a detailed and robust safety case and will take clear long-term responsibility for managing the legacy of any radioactive waste that may be produced by the new designs. Assuming the basic concept holds true, that the Environment Agency (and HSE) is fully discharging its role as professional, impartial and independent regulator in assessing the generic safety case, our second area of interest is that Fylde Borough is home to a nuclear fuel production facility and we would want to offer our support in general terms to the principle of a new generation of nuclear power stations on the basis that the industry provides a significant amount of employment within our community. We would like to see this employment base retained and developed in order to sustain the economic wellbeing of our communities as the nuclear industry re-emerges. One would expect that lessons learned from previous experiences of nuclear power generation and waste management will be used to inform safety systems and other environmental protection systems associated with the new generation of nuclear power stations such that our successors will have every confidence that we have left a productive, efficient and manageable legacy for them. We are encouraged by the efforts you have made so far with the Generic Design Assessment but note that, in addition to the potential GDA issues for both of the generic designs being assessed there is a relatively long list of ‘other issues’ in the summary consultation documents which require further attention. Our expectation is that the Environment Agency will continue to adopt its robust approach with all requesting parties in securing satisfactory responses to these issues in advance of issuing SODA. We have no specific comments to make in relation to the proposed limits for radioactive waste

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		discharges. Thank you once again for the opportunity to comment on your GDA work
GDA88	Health Protection Agency	The Health Protection Agency has no comments on question 17.
GDA92	Member of Public	The respondent has provided a letter, available to see on our website, containing detailed comments on development of new nuclear in Anglesey and the issues of storage and final disposal and spent fuel. An extract from the letter follows: *The development of a major nuclear power station project in Anglesey will cause problems due to the significant increase in traffic, and the temporary, and permanent increases in population. These changes, which will take place in a relatively short period of time will also have an adverse effect on the environment, infrastructure, and all local public services.* *The decision to store the spent irradiated fuel elements on site for 160 years without any guarantee of the capability and effectiveness of the developer to control this hazardous material over such a long period of time.*
GDA96	Springfields Site Stakeholder Group	The Springfield SSG agree that the GDA process is robust & thorough and should ensure new build plants are safe & environmentally acceptable. New build offers a big opportunity to bring new business to the UK and secure existing jobs, especially at the Springfields site. When fuel is made at Springfields for the new generation of reactors we are confident they will continue to be closely monitored & scrutinised by the regulators to ensure there is no substantial adverse impact.
GDA100	Shepway District Council	Thank you for your invitation to comment on the above consultation. As you know while Dungeness is not on the government's preliminary list of potentially suitable sites, we support the development of a new nuclear power production at Dungeness, and as the local authority for the area we have a keen interest in assisting the process. We have considered the Generic Design Assessment but at this stage are unable to express a preference for either type of generator, particular as we know that different sites will demand different final design solutions, for example in terms of the disposition of ancillary buildings and stack heights. Instead, and principally in response to your questions 16 and 17, at this stage our preference would be for a design solution which would enable development of a power station to proceed; be suited to our local site conditions; afford the highest provision for the safety of the local community and have the lowest environmental impacts, particularly with regards to:- • Appearance - in terms of bulk, height and massing, colour, lighting etc.

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		• Emissions - noise, air and water quality, waste disposal and storage. • Resource requirements - particularly the abstraction of fresh water. • Security of waste storage. • Habitats and biodiversity - as a local authority we have a duty of regard under the NERC Act and would want to be assured that any development has the lowest direct and indirect impacts on the surrounding national and international nature conservation sites at Dungeness, during both the construction and the operational stages I hope that this is helpful and thank you again for the opportunity to comment.
GDA102	Waldringfield Parish Council	The general issue of security has not been dealt with in these documents. Given the present danger of terrorist attack, the fact that terrorists are becoming increasingly well organised and ambitious, and radioactive material's potential for causing serious damage to people, the environment and the economy, this issue needs to be given far more serious consideration than seems to be the case so far. Security needs to be built in to the design of reactors, transportation units and storage facilities - it should not be bolted on after the designs have been agreed. The comments apply to both the EPR and AP1000 systems (although the section references are for the EPR document).
GDA105	Forum 21	We have a similar concern over potential implications of a tsunami event in the Bristol Channel. There is reasonably strong evidence of a tsunami in January 1607 that caused devastation and much loss of life along the Somerset coast (reference below). Where is the research into the frequency risk of such an event, including consideration of geological instability in the Atlantic islands and mid-Atlantic trench, and the ability of the proposed nuclear power station and its waste facilities to withstand a wall of water several metres high accelerating up the channel at several metres per second? We believe that Somerset residents have a right to expect the Environment Agency and other regulators to ensure that these risks are fully and adequately investigated and evaluated by the applicant or the regulator or both, and discussed in a public arena with full transparency. We are unsure, as a consequence of the complex and overlapping regulatory mechanisms and consultations involved in this case, that this is the right place to raise these concerns. In particular we are bemused by the emphasis in this consultation on design and in the local authority consultation on ancillary matters, which seems to leave a gaping hole around the fundamental risks and issues of the EPR design being built at this particular location. If some other process is more appropriate we would welcome clear and transparent referral of these comments to that other process, and feedback to our organisation.

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		Was the AD 1607 coastal flooding event in the Severn Estuary and Bristol Channel (UK) due to a tsunami? This article was originally published as Bryant, EA and Haslett, SK, Was the AD 1607 coastal flooding event in the Severn Estuary and Bristol Channel (UK) due to a tsunami?, Archaeology in the Severn Estuary, 13, 2002, 163-167. This paper is posted at Research Online. http://ro.uow.edu.au/scipapers/94
GDA107	Safety and Reliability Society	The Step 3 GDA reports for both AREVA/EDF EPR and Westinghouse AP1000 are very clearly written and presented with the key points of the technologies proposed, well summarised and explained. The assessment process appears to be transparent, technically thorough and well reported. The Safety and Reliability Society (SARS) fully supports the way in which HSE- NII and EA have approached the consultation so that the openness and clarity of this nationally important assessment process is highlighted to all stakeholders. The Stage 3 summary reports present an overview of the assessment work to date, this work has utilised both HSE/EA and contract expertise. The following high level summary points are raised, noting that SARS has not reviewed underpinning technical review and analysis in detail since this can only be meaningfully carried out with all the necessary technical data provided to HSE/EA and with suitably qualified expertise in each of the 15 topic areas assessed. The summaries of significant issues identified by HSE/EA are very useful and prompt the following comments. AREVA/EDF EPR - The proposed changes to the C&I systems required to separate control and protection functions would appear to be in line with good practice. However, the safety integrity level of these systems will have to be suitably high. What timescale implications will this have given the need for the necessary validation and verification activities to derive an appropriately high level of confidence for the separated and re-configured software and hardware protective systems.
GDA106	NNB Genco	We commend the rigour of the Environment Agency's implementation of GDA. This will be of material benefit in ensuring that site-specific permitting will start from a secure, well assessed understanding of the environmental characteristics of the UK EPR reference design, reducing the regulatory burden for each individual implementation of that design. The GDA has also ensured timely identification of issues where further design or justification work has been essential to demonstrate compliance with UK regulatory requirements. This will help secure consistency across a future fleet of UK EPRs, maintaining the technical and economic benefits of a

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		common reference design. More specifically, we welcome the conclusions that: BAT has been applied to minimise generation of radioactive waste at source and discharges of gaseous and liquid wastes ILW and spent fuel would be disposable in the GDF, and LLW would not be produced in a form for which there is no foreseeable disposal route. The radiological impact is well within all relevant dose constraints, including the more stringent proposals by the HPA. Non-radiological discharges are capable of being permitted; and The Environment Agency assessment concludes that it could issue an Interim Statement of Design Acceptability. As prospective owner/operator of UK EPRs, we welcome the acknowledgement that arrangements are in place to ensure knowledge transfer from the designer to the owner/operator. We recommend that these important conclusions are expressed in a form we can reference with certainty. This will be essential if the work undertaken in the GDA is to be fully effective in practice - i.e. in establishing ground that does not need to be repeatedly reopened in subsequent site-specific permitting. More specifically, we are also concerned at the translation of values for calendar year limits proposed in the PCER directly into rolling annual limits. With fuel cycles extending to 18 months or beyond and two units on a single site, rolling limits may need to be higher than limits based on a calendar year. Without this, the limits may artificially constrain plant operation with no real benefit from reduced discharges. We note that, when applying for site-specific permits, prospective operators such as NNB GenCo will need to take account of factors beyond the scope of the GDA. These include the characteristics of the proposed site including its Environmental Impact Assessment; the potential for more than one UK EPR and for interim spent fuel and ILW stores to be located at the site; and their intended plant operating regime. As a result, while still taking full credit for the ground covered by the GDA, operators may justify discharge limits and QNLs that differ qualitatively (e.g. radionuclides) and/or quantitatively (e.g. numerical limits) for their specific site. We also note that, since radiation metrology is a constantly advancing field, it is inappropriate to require decisions on detailed equipment and techniques far in advance of their practical application. More generally, the GDA and site-specific permitting processes should not be applied in a way that prevents operators from making technical decisions at the appropriate time, so as to benefit from ongoing innovation in equipment, techniques and standards. Finally we recognise that, at this time, some issues remain to be resolved. We are confident that these

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		can be addressed either during the remainder of the GDA or during site-specific permitting.
GDA111	Scottish Water	Scottish Water welcomes the opportunity to comment on the aforementioned consultation for UK EPR Nuclear Power Plant Design by AREVA NP SAS and Electricite de France SA. Scottish Water does not have a specific contribution to make. As we are a consultee for all issues relating to the disposal and management of waste arising from nuclear facilities in Scotland, Scottish Water's focus for design would be on health and safety and the potential for any variations in the disposal operation of that facility having a particular impact on water resources and discharges entering the sewerage system. We therefore wish to stress the need to ensure that the design of such nuclear plant and the discharges of wastes from this plant have to be subject to stringent regulation. It is essential that Scottish Water can easily access information regarding the locations, quantities and nature of any disposed radioactive waste. To facilitate this, a register of locations where the waste has been disposed of should be maintained. This should also readily available to Scottish Water.
GDA112	Blackwater Against New Nuclear Group (BANNG)	The respondent provided a document, available to see on our website, the following is an extract from the document: **Relevant issues not considered in the GDA** Finally, there are some site specific issues which have generic implications but which are not considered in the GDA. We are concerned with one such issue in particular, the problem of flooding at sites. The consultation documents comment on this as follows: 'New nuclear power stations are likely to need new or enhanced flood defence structures. A flood defence consent will be needed to construct these but, as flood defence is necessarily site-specific, we have not considered this matter during GDA' (p.23). BANNG does not agree that this is just a site-specific issue. Given that the GDA designs assume coastal locations and the listed sites are almost all coastal or estuarial, the issue of flooding is relevant to all sites and, therefore, should be regarded as a generic issue. Over the time-scales during which there is likely to be a nuclear presence, covering operational, decommissioning and waste management, the impacts of climate change will increase. We commented earlier on the lack of robust waste management plans for the indefinite time-span that is possible on the sites. This problem is compounded by the possibility of inundation resulting from sea level rise, storm surge and coastal processes. Forecasts of coastal change reveal that parts of the Dengie peninsula on

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		which Bradwell is situated will be permanently under the sea within the next century. According to the government the problems of forecasting change mean that 'it is not practicable to consider beyond 2100' (DECC, 2009, p.51). In other words, assessments of safety and integrity of systems cannot feasibly be made beyond the next century whereas it is highly probable there will be nuclear activity on floodable sites for up to two centuries. The Environment Agency in its commentary on the Bradwell site (and others) in the NPS makes the following equivocal statement: 'The Environment Agency has advised that it is *potentially* reasonable to conclude that a nuclear power station within the nominated site could *potentially* be protected against flood risks throughout its lifetime, including the *potential* effects of climate change, storm surge and tsunami, taking into account *possible* countermeasures' (our emphasis)(DECC, 2009, p.66). **We believe that the continuing viability of sites is a generic issue and, therefore, should be covered in the GDA. Any circumstances which threaten the integrity of nuclear operations or waste management on sites must be taken into account. Sites that are liable to inundation within the next 200 years must be ruled out. BANNG considers that the continuing integrity of sites is an issue that must be identified and taken into account in the GDA.** **6.0 Summary and Conclusions** We have four major concerns with the GDA consultation. First, is the consultation process itself. Given that the decision on design approval is fundamental to the whole future of new nuclear power it is vital that the wider public and especially those communities around the listed sites who are most likely to be affected by the decision are provided with an opportunity to participate fully in the debate and are able to have an input into the decision making process. In our view the consultation process, despite some effort to open it up, has been overly technical, exclusive and not interactive or participative. In consequence nuclear interests enjoy a position of privileged access while the wider public remains uninformed and unaware of the scale and implications (especially for long term waste management) of the proposed reactor designs. **We therefore regard it to be imperative that the regulators proactively seek to inform, engage and encourage a wider and participative consultation before proceeding to take any final decisions on the acceptability of the proposed designs.** Secondly, we are concerned about the nature of the GDA process itself. Throughout the documentation it is clear that the regulators are not in possession of all the information needed to determine whether the proposed designs are acceptable or not. This lack of information is especially evident with respect to the

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		management of radioactive wastes where proposals from the designers are lamentably deficient. And yet the regulators are willing to signal conditional approval in the expectation that sufficient information on these matters will be forthcoming. There is, therefore, a presumption in favour of approval that would be difficult to reverse. And it is likely to encourage preliminary development and commitment of financial resources by companies which, in itself, gives momentum to further development. We consider this presumption is not justified and, therefore, that the decision to approve is pre-emptive and likely to lead to a situation of premature legitimation. BANNG is concerned that the regulators have too readily conceded interim statements of design acceptability in advance of sufficient information on the 'GDA Issues' to which the decision is subject. **We urge the regulators to make an unambiguous declaration that GDA approval will not proceed unless and until detailed, credible and verifiable information and evidence is provided to enable a robust safety case to be made.** Thirdly, we are concerned that the uncertainties are such that much of the necessary information is not, at present, obtainable and is unlikely to be so for some considerable time. In our response we have focused on the issue of radioactive waste management which is clearly of great concern to the regulators also. The documents reveal a palpable lack of information on how wastes will be managed. It is unclear how the wastes will be stored (wet or dry, surface or underground), what packaging and encapsulation facilities are envisaged and what transfers and transport might be required. It seems likely that wastes will remain on sites for a long time although there may be regional or central stores, on which no comment is made. In terms of time-scales, the proposals seem hopelessly vague. Although there is a likelihood of storage on site for up to 200 years (and possibly indefinitely) the proposals do not appear to look beyond about 100 years. There is an expectation that ultimately a repository will be provided to take the long-lived solid wastes. As things stand, there is no site in prospect and there may never be. The safer assumption must be that, in the absence of a long term permanent solution, wastes will remain in store on sites placing a burden on future generations. **BANNG urges the regulators to suspend the GDA process until such time as there is adequate information provided on how the wastes arising from new build will be managed and there is in place a long term management solution that is scientifically robust and socially acceptable.** Our fourth major concern is the relationship of generic principles to more specific siting issues. It is clearly not possible to divorce the generic and specific and we feel that the GDA has barely taken into account the effect of the generic on the specific or, for that matter, the impact of the specific on the generic. The connection becomes manifest when the features pertaining to all the listed sites are considered. The ten listed sites have one thing in common – they are all at or near the coast or on estuaries. The appetite of

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		large new nuclear power stations for cooling water has proved an overriding siting requirement which requires the large volumes available from the sea. Both designs calculate the impacts of radioactive discharges on the basis of 'generic sites' based on coastal locations. In this respect we note that estuarial locations have a more limited capacity and the impacts of cooling water on marine ecosystems in such shallow and enclosed locations is liable to be much greater than if discharges occur to open sea.. **Therefore, we recommend that estuarial sites should be withdrawn from any further consideration in the GDA process.** All the sites listed are potentially vulnerable to flooding, storm surges or coastal processes, particularly so in the longer term as global warming impacts on climate change and sea level rise. In effect, climate change is a generic issue applying to all sites. The uncertainties about waste management on site will increase over time just as the impacts of climate change on vulnerable coasts are also increasing. **It strikes us as imperative that the GDA analysis takes into account the impacts of climate change and that unless the regulators are fully satisfied that nuclear activities can be safely and securely operated on coastal sites for the indefinite future the GDA should not approve any designs for new nuclear power stations.**
GDA114	Shepperdine Against Nuclear Energy (SANE)	As you are aware our campaign group is a new group which was formed during the last Government's consultation on the draft NPS which closed in February this year. We are a group of local residents living close to the site known as Oldbury, which has been nominated by the Government for a massive new nuclear power station. This site is in fact within the village of Shepperdine, some 2.5km to the north of Oldbury-on-Severn. We continue to grow in numbers and include residents from the village of Shepperdine itself, Oldbury, Rockhampton, Nupdown, Falfield and the nearby town of Thornbury. Our group is strongly opposed to the development of new nuclear power at Shepperdine. The reasons for our objections are clearly set out on our new dedicated website www.shepperdineagainstnuclearenergy.org.uk. We draw your attention to the contents of this website, as it will help you to understand our groups particular concerns. The core group that run SANE are all busy working people who are doing their best to run our campaign outside their normal working days. We do not have the manpower, indepth expertise or funds available to comment on the massive technical documents generated by your consultation. The documents are lengthy and of such a technical nature that we are surprised that members of the public are expected to read these, understand them and comment on them in the depth demanded by such an important process.

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		As we made clear at your seminar, the lack of local publicity and/or workshop facilities to assist the public in understanding these documents and to help them in responding effectively leaves this consultation woefully inadequate. From the seminar we did note the following which we consider to be fundamental flaws in the GDA process: 1. **Cumulative effects of multiple reactors on the Generic Site** The whole assessment to date is based on the siting of one of either of the two types of reactors only. However, the applicants proposals put forward to date are for more than one reactor (two in the case of the Areva EPR and three in the case of the Westinghouse AP1000). It is our understanding that none of the applicants will construct a plant involving only one reactor of either type, as this is not economically viable. As a result, we are certain that there will be significant cumulative effects to take in to account associated with constructing more than 1 reactor on the same site. These cumulative effects should be considered now before deciding whether the new reactors should receive GDA approval. To fail to consider such effects at this stage makes any GDA approval meaningless and misleading to those seeking comfort from the GDA process. 2. **Non-coastal sites will need to be completely re-assessed** The assessment is based on siting one of either of the two types of reactors on a generic coastal site. We therefore consider that the GDA is totally irrelevant to non-coastal sites such as Shepperdine. The problems associated with non-coastal sites have not even been considered in the GDA process. This shortcoming is seriously misleading those parties seeking comfort from the GDA process and totally undermines confidence in your credibility should there be any serious consequences of siting a 'coastal' nuclear installation at Shepperdine which is not adjacent to open sea. The particular concerns, pointed out in our response to the DECC NPS consultation and on our website included the necessity to use additional cooling methods due to the site's non-coastal location; the impact on a sensitive environment which is of national and international importance for its natural beauty and biological diversity; and the risk of flooding. The proposal to site cooling towers is one that has particularly angered local people, including many who have learned to live with the existing lower capacity nuclear power station at Oldbury.

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		Much further work needs to be done to consider the effects on non-coastal sites where many impacts will be vastly different. To issue GDA approval without considering these issues will undermine any confidence in your GDA process. As a further example, during your seminar we learned that radioactive tritium waste will be discharged in to the sea. This can not be achieved at non-coastal sites, including Shepperdine. We are staggered that this extremely important waste issue has not even been considered to date. 3. **Reactor waste disposal** Our community group is deeply concerned about the lack of information and uncertainty surrounding the proposals for disposal of reactor waste. It is evident that neither the Government nor the applicants are yet able to state with clarity or confidence how the high level toxic reactor waste from these new high-capacity reactors will be disposed of safely and that the plans for a GDF are a long way from reality. Until the Government is able to properly demonstrate that these wastes can be disposed of safely there should be no further steps taken towards the development of new reactors. To do otherwise will, by default, impose the storage of this waste on the communities affected - a potentially hazardous situation which will last for an indefinite period that could run into many generations. It is completely unacceptable to expect the communities to store this waste on site without a certain and safe plan for both it's long term disposal and transportation, supported by a definite time scale for its provision and allocated funding in place. Furthermore it strikes us as foolhardy to envisage storing nuclear waste at all within a high level risk flood zone and we are at a loss to understand how the EA can even consider this suitable. We would also like to point out that the GDA documentation relating to waste disposal and storage is woefully inadequate; bearing in mind that this could be for many decades, this seems both irresponsible and dangerous.
GDA117	Nuclear Industry Association	Given their highly technical nature the NIA does not propose to comment on the EA's detailed conclusions, which are more a matter for Areva as the design vendor and EDF as the utility that would operate the new stations. However we would like to make some general comments on the assessment. In particular we would like to express strong support for the GDA approach for assessing the environmental impact (and technical aspects) of new reactor designs before individual site applications are made. It makes sense to consider these issues at a national level so that when future operators apply

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		for licenses and permits only the site specific aspects of the design are considered. We agree with the EA's conclusion that this is not only leading to improved efficiency both for the Regulators and the industry but is also delivering increased protection for the public and the environment. In this context it is clear from the very full and detailed analysis set out in the consultation that the EA has undertaken a thorough, comprehensive and robust assessment. This will provide strong reassurance to both the public and potential operators that the environmental issues associated with the plant have been properly considered. More specifically we clearly welcome the EA's conclusion, following this rigorous assessment of the EDF/Areva submission, that they can issue an interim statement of design acceptability for the UK EPR. We note in particular the EA's confirmation that: • Best Available Techniques (BAT) have been applied to minimise generation of radioactive waste at source and discharges of gaseous and liquid wastes • the radiological impact is well within all relevant dose limits • and that non-radiological discharges are capable of being permitted Whilst we note that more work and further information is required to resolve specific technical issues, we share the EA's confidence that these are resolvable. We understand from EDF and Areva that that they are fully committed to resolving all the outstanding issues within the timeframe of the GDA process. More generally we would note that new nuclear stations can make a major contribution to achieving the UK's security of energy supply and climate change objectives, and that the first new plant is expected to be commissioned by 2018. However this timetable will only be met if progress is maintained on all the Government's facilitative steps for new nuclear build, including the Generic Design Assessment. In this context we note that it is the EA's intention to publish its final conclusions in June 2011 and it is important, for the reason set out above, that this timetable should be adhered to. It would also be helpful if the Agency's conclusions could be presented in such a way that they can be referenced in future permit applications, to establish ground that does not need to be re-examined when site specific applications are dealt with
GDA119	Member of Public	The respondent has provided a detailed document, available to see on our website, listing many concerns. We have put extracts from the document in relevant questions above. Another extract is provided below:

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		I have reservations about the Environment Agency's mindset. These are just general observations: *a. At Point 7 of your Executive Summary where you say the GDA focuses mainly on radioactive waste issues, implies a rather dismissive and complacent attitude to everything else. You justify this approach because it is based on past experience… always worrying when it comes to anything to do with the civil service because you put value on processes that perpetuate the 'this is the way we've always done it' mentality. There is nothing here that hints at a 'fresh' approach or that you will ever question the underlying premise on which assumptions are made. (see point d))* *b) The Environment Agency seems to be limited to assessing things to the present… Best Available Techniques, etc. You do state that your remit only covers what has been submitted. However, it is worrying that you do not appear to look into the future at all and anticipate problems, e.g. as a result of climate change, external threats, etc. Are the EA really not looking beyond present day best practice and its adequacy in the future?* c) *Littered throughout your consultation document are issues you've identified, yet you seem to be willing to pass on to the 'site specific' permitting stage. I fail to understand the EA's rationale for this as, to me, they are more generic problems and not operator specific or site related and therefore should be flagged as a GDA Issue.*
GDA121	Bradwell For Renewable Energy	Bradwell for Renewable Energy is an Essex-based grassroots group that has, throughout its 25- year history, campaigned for sustainable energy in Essex, and particular on the Dengie Peninsula, as an antidote to nuclear generation, which we believe impinges on future generations in a way that other forms of generation do not. **We endorse in every way the consultation response by Blackwater Against New Nuclear (BANNG).** [see GDA112] We would like to emphasise in particular the following concerns: • The desk-bound nature of this consultation, especially considering the wish to involve members of the general public. Having attended the seminar in Birmingham on the reactor designs, and having strongly inputted into the workshop on stakeholder engagement, it is depressing to see a consultation process that is seemingly designed to put off the average member of the public. Furthermore there is no evidence, apart from involving groups such as ours, of the Environment Agency going into the communities to talk through these documents, so that individuals might have the courage to put take part in this consultation. This is particularly important, in that, with the revision of the planning infrastructure laws, there will be little room for the public to subsequently change the course of events.

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		• A sustainable course of action must require a project to be examined from cradle to grave. The issue of spent fuel is ill served by the EA's assertion that all is well, in spite of the fact that work on this is incomplete. The public around these sites deserve to know, firstly, that there will be High Level Radioactive Waste stored on site for around 160 years (the evidence around Bradwell is that they do not.) They also need to know that the authorities can prove that work on storage has been successfully completed, be informed on what will happen during that 160 years, and where it will go after that. • The GDA sits uneasily against the particular localism of the various sites. In our case, this is the Blackwater Estuary, with its complicated ecology and liability to flood. As at this stage these issues are not taken on board, the public finds itself in an unsatisfactory situation as only half of the picture is there. There is such a rush to new build that we are concerned that there is the danger of regulatory progress being ambushed by the Government, and by companies prematurely moving in on the various sites. The GDA must be in place in its entirety before work begins
GDA123	L2 Business Consulting	Overall the reports are good and well laid out, especially with consultation questions stated at each relevant point. Obviously a lot of work has gone into the assessments.
GDA125	Greater Manchester Socialist Environment Resources Association (SERA)	Although the GDA focuses mainly on radioactive waste as a main issue, SERA is concerned by the revelation that EDF are not factoring in what is already predicted about Climate Change, sea level rises, severe weather events, flooding and drought impact on concrete structures and transport infrastructure, and of the impact of Peak Oil. The report acknowledges that their plans for new build design , "Do not consider climate change impacts which require flood defences" (P 102). Mitigation and adaptation measures for such potentially dangerous technology would therefore have to be paid for by the British State and this will be a hidden subsidy.
GDA126	Sellafield Ltd	This response has assumed that the dose assessment is correctly applied (noting the importance of this as the basis for limits).
GDA127	Horizon Nuclear Power	Horizon is pleased to acknowledge the thorough and demanding review undertaken by the EA and its indispensable value in providing confidence in the EA's conclusions. The GDA process has been innovative, highly open and transparent and extremely helpful in building a coordinated view with the nuclear safety regulator. To assist the process of building on GDA as a firm foundation for permitting, it would be helpful if the

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		decision document were to consider more explicitly the links and interactions between the GDA, site permitting and planning processes. This is an area that merits further work beyond the current identification of Other Issues and Horizon would be pleased to support this important work. Looking ahead to site permitting and planning, this will also assist the EA in considering the regulatory resources required for timely permitting of several projects sponsored by different operators and involving a number of different sites. 1. Horizon Nuclear Power (Horizon) welcomes the opportunity to respond to the Environment Agency's (EA) Consultation on its findings to date during the Generic Design Assessment (GDA) of the AREVA/EDF UK EPR and Westinghouse AP1000 designs. 2. Horizon is a joint venture between its shareholder companies, E.ON UK and RWE Npower. We aim to develop and construct around 6GW of new nuclear power station capacity in the UK and have already acquired interests in land at Oldbury in Gloucestershire and Wylfa on Anglesey in Wales. We have also concluded grid connection agreements for both sites. 3. Horizon and its shareholder and parent companies have participated in the GDA process since its inception as utility supporters of both the UK EPR and AP1000 designs. We believe that both designs can be constructed and operated safely and securely at sites in the UK. 4. Through both our in-house expertise and that available from the E.ON and RWE groups, Horizon is well placed to respond to the questions contained in the EA's consultation documents. 5. As we highlight in the majority of our responses to the consultation questions, we welcome the thoroughness of the EA's review and agree that the EA has been rigorous in reviewing the wealth of material provided by EDF/AREVA & Westinghouse. We support the high expectations identified by the EA throughout the review. 6. We also believe that the GDA process should be confined to generic reactor design issues and that it is important to draw the distinction between generic, site specific and operational issues and that each of these should be considered at the appropriate stage of the relevant licensing and permitting processes during the lifetime of the project. 7. In summary, Horizon strongly believes that good progress has been made with the GDA process. We believe that if all parties are able to maintain this level of progress and commitment, then the GDA process is on course to allow the EA to deliver a final Statement of Design Acceptability at the end of the GDA. This should mean that the "GDA Issues" will be addressed to the EA's satisfaction

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		and that a clear pathway will be identified to manage "Other Issues". Importantly, this will mean that no GD Issues will need to be reopened during the EA's site specific permitting process. This clarity of the "GDA end point" will be one of the key measures of the success of GDA process. In turn, this will enable us to make robust site-specific permitting applications going forward.
GDA129	Committee on Medical Aspects of Radiation in the Environment (COMARE)	The respondent provided a letter, available to see on our website, the following is an extract from the letter: Given that these NPPs will be part of a new generation of plants, it might be expected that discharges would be lower than existing facilities, rather than 'within the range of historic discharges' which seems to be the criterion being applied by EA. In both documents, the statement is made that, for tritium discharges, 'the impact is low'. It should be noted that the recent AGIR report, supported by COMARE, suggests that current dose estimates are low by a factor of 2 for tritiated water and by a higher factor for organic forms. For both submissions, the levels of tritium and carbon-14 emissions are relatively high; the latter in particular appears to dominate the off-site doses. We recommend, therefore, that levels of carbon-14 are monitored in both liquid and atmospheric effluents. In several places, justification for not applying discharge reduction is stated as 'increasing doses to workers'. There does not seem to be data to support this – indeed it might be instructive to request data on expected staff doses from routine operation and maintenance. In order to make a more comprehensive comparison between designs, and given public apprehension in this area, it would be useful to seek information on the discharge and dosimetric consequences of potential abnormal situations. Both designs depend to a great extent on the manufacturing quality control and reliability of fuel elements in order to control waste arisings. It will be important to ensure that operators adhere to the intended operating standards over the lifetime of the plant and that it is made mandatory to implement any improvements made by the manufacturers. What arrangements would be available if current manufacturers went out of business? We support the EA approach of using QNLs in order to give early warning of problems arising from fuel assemblies. There is no mention in either submission of terminal filtration in the sea discharge lines, which could be important in the event of waste processing plant failure. While EA does not propose continuous monitoring of the final discharge, this might well be of value and could be implemented at relatively small

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		cost – it would not need to be nuclide specific. More emphasis should be placed on re-use, recycling and decontamination of wastes in reaching authorisation limits, particularly for solid waste. We support EA's view that more information is needed on decommissioning and we wish to express our reservations about on-site storage of ILW in unmanned facilities. The committee also notes that the estimated radiation doses to the public (and non-human species) from gaseous and aqueous discharges are low and within regulatory limits and constraints. We note that the data provided for the UK EPR assessment are based upon an actual comparator rather than theoretical extrapolation. The effects of using gadolinium should be quantified (EPR para 209(a)). EPR para 338 lends weight to the general comment above regarding fuel assemblies. In EPR para 345, it is not made clear what the expected capacity of the iodine traps will be; are they specified to account for particular potential operational problems? We commend the approach detailed in EPR para 494 aimed at minimising solid waste production
GDA133	Nuclear Waste Advisory Associates (NWAA)	The respondent provided a document, available to see on our website and at http://www.nuclearwasteadvisory.co.uk/uploads/8795NWAASubmissiononEANewBuildWasteConsultation[final].pdf, the conclusions from that document are reproduced below: 1. The EA Assessment Reports fail to fully analyse the NDA's Disposability Assessment reports and the Requesting Parties responses. Instead they postpone dealing with outstanding disposability issues to some unspecified time in the future. This is unacceptable. 2. The consultation documents fail to acknowledge other work by the EA which states that it is possible that an acceptable safety case for a GDF cannot be made. 3. At present it is quite apparent the nuclear industry would not be able to dispose of new build reactor wastes safely. It would be wholly irresponsible to wait until such wastes are created to confirm this. Unless and until the nuclear industry are able to demonstrate that new reactor wastes could be disposed of safely there should be no further steps taken towards the development of new reactors. 4. If the nuclear industry is not required to prove it has a safe disposal route for wastes until after the planned reactors are built, then a powerful financial momentum would be created towards allowing the

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		reactors to operate – and so produce waste fuel for which there was no long term safe management route. 5. NewBuild waste fuel requires on-site storage for one hundred years simply to allow it to cool down. Adding on the expected operating life of 60 years means that a NewBuild reactor site could end up as a waste site for at least 160 years. This means communities around new reactors might be expected to host a waste site for almost two centuries. In fact the rector site could possibly be a waste site indefinitely – if, as looks quite likely, it not possible to develop a safe disposal route for the wastes.. 6. The EA consultation leaves communities around nuclear sites with far too many uncertainties. As well as not knowing how long waste fuel might be stored on site, or what kind of a store would be used, they do not know whether they will be required to host a packaging facility, with its associated risks, or even an Intermediate Level Waste incinerator. Communities on transport routes do not know when waste may be transported through them. It is possible that a community may be asked to host a centralised storage and packaging facility at some point in the future. No indication is given over whether such a facility would be required, and if so where it would be. This means communities that might be affected by NewBuild wastes are not able to contribute to decisions that would affect them. 7. If a new build programme is much larger than around 6 new reactors (10GW), two sites for Geological Disposal Facilities are likely to be sought – doubling the risk to the UK population. 8. The EA fails to explain how the proposal to approve new gaseous and liquid radioactive waste discharges into the environment from new reactors can possibly be consistent with commitments made by the UK Government to OSPAR to achieve concentrations in the environment of artificial radioactive substances close to zero by 2020. 9. The EA ignores one of the Guiding Principles of the OSPAR Strategy with regard to radioactive substances which is the application of "*best available techniques and best environmental practice, including, where appropriate, clean technology*". In the case of electricity generation clean technology would include the various forms of renewable generation.
GDA135	Member of Public	The online consultation proved impossible to use - I saved some draft comments which I could then not find to re-access. I wasted a considerable amount of time. Please improve the navigation system.
GDA137	RWE NPower	RWE Npower Ltd (Npower) welcomes the opportunity to respond to the Environment Agency's (EA) Consultation on its findings to date during the Generic Design Assessment (GDA) of the AREVA/EDF UK EPR and Westinghouse AP1000 designs.

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		Npower has participated in the GDA process since its inception as utility supporters of both the UK EPR and AP1000 designs. These activities have been transferred to Horizon Nuclear Power (Horizon), however Horizon continues to draw heavily on the experience and expertise of Npower and other RWE companies in its participation in the GDA. Npower therefore feels confident in stating that both designs can be constructed and operated safely and securely at sites in the UK. For the detailed response to the consultation questions you have asked regarding each of the two reactors, please see the separate response submitted by Horizon Nuclear Power. This response reflects the views of Npower as a 50% shareholder in Horizon and an investor in nuclear new build in the UK. At a general and higher level, we would like to make the following points: Npower welcomes the thoroughness of the EA's review and agree that the EA has been rigorous in reviewing the wealth of material provided by EDF/AREVA & Westinghouse. We support the high expectations identified by the EA throughout the review. We also believe that the GDA process should be confined to generic reactor design issues and that it is important to draw the distinction between generic, site specific and operational issues and that each of these should be considered at the appropriate stage of the relevant licensing and permitting processes during the lifetime of the project. Npower strongly believes that good progress has been made with the GDA process. We believe that if all parties are able to maintain this level of progress and commitment, then the GDA process is on course to allow the EA to deliver a final Statement of Design Acceptability at the end of the GDA. This should mean that the "GDA Issues" will be addressed to the EA's satisfaction and that a clear pathway will be identified to manage "Other Issues". Importantly, this will mean that no GDA Issues will need to be reopened during the EA's site specific permitting process. This clarity of the "GDA end point" will be one of the key measures of the success of GDA process. In turn, this will enable Horizon to make robust site-specific permitting applications going forward.
GDA139	Member of Public	The building of new nuclear power stations is desirable, modern low environmental impact power generation is essential. I consider that the replacement of the old reactor at Dungeness A by a new station on the same site makes sound economic and environmental sense. The infrastructure for recycling of radioactive waste and of fuel is a well-established routine at Dungeness and should be recycled.
GDA143	Countryside Council For Wales	We note that the GDA is based on a single reactor, but at most sites we understand that there could be 2 UK EPR or 3 AP1000 units. The associated discharges/emissions we assume would need to be scaled up by the relevant factor. It is unclear to us the extent to which these cumulative issues have been taken into account in the GDA and the possible implications for any decision on issuing a statement of design acceptability.

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		Whilst we appreciate this is a generic assessment we are concerned that there is a strong reliance on deferring some aspects of the assessment down to the site specific level site particularly in relation to entrapment issues and biocide use as above. In order that the GDA process is used to the maximum potential and provides timely influence on the reactor designs we would like to see these issues considered. CCW and our sister agency in England, Natural England, have particular responsibilities and functions under the Habitats Directive and it's implementing Regulations within the UK. We are disappointed that the GDA, as currently written, does not specifically consider the implications of generic designs on the features of interest and integrity of European Sites and Ramsar Sites, especially given the predominantly coastal and estuarine location of proposed sites and the inevitable need for large scale abstraction and discharge (see additional points above). We would welcome opportunity to discuss these comments as the GDA process goes forward and you look to issue statements of design acceptability.
GDA145	Institute of Mechanical Engineers	Notwithstanding that the Generic Design Assessment is not intended to cover Site Specific Issues, the potential for adjacent nuclear facilities to provide storage of radioactive waste and monitoring of s radioactive waste discharges should be recognised. A statement should be included in the document referring to the suitability of the design or otherwise for burning mixed-oxide fuel. Fuel Pin reliability data for existing similar power stations should be included. If the principle of continuously reducing discharges to the environment is to be applied then it should be possible to conclude for most sections that discharges will be 'lower' than those of comparable power stations as opposed to 'not exceeding' those of comparable power stations. It's a pity the applicants have to be assessed by two regulatory bodies but that's beyond the scope of this questionnaire.
GDA147	Kent Against a Radioactive Environment	Over the last few weeks KARE have been communicating with BRARE and BANNG with respect to a united response to the Reactor Generic Design Assessment consultation. KARE are in total agreement with BANNG's response and members have asked me to make the following statement: "On behalf of Kent Against a Radioactive Environment (KARE) I should like to fully endorse BANNG's response to the Generic Design Assessment for Bradwell or Dungeness. I should also like to add that this response aligns in full with the opinions of our group with respect to new nuclear reactor design for use at Bradwell, Dungeness or anywhere else in the UK".

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		Extracts from BANNG's response are copied into relevant questions above (GDA112) and their full response may be seen on our website.
GDA149	Nuclear Consultation Group	The respondent provided a document, available to see on our website, we include the summary and conclusions of that document: • The EA fails to explain how the proposal to approve new gaseous and liquid radioactive waste discharges into the environment from new reactors can possibly be consistent with commitments made by the UK Government to OSPAR to achieve concentrations in the environment of artificial radioactive substances close to zero by 2020. (NFLA, 2010). • The EA ignores one of the Guiding Principles of the OSPAR Strategy with regard to radioactive substances - which is the application of "*best available techniques and best environmental practice, including, where appropriate, clean technology*". In the case of electricity generation clean technology would include the various forms of renewable generation. (NFLA, 2010) • The emplacement of legacy waste in a 'Geological Disposal Facility' (GDF) is unlikely to be completed until at least 2130. New reactor spent fuel could require storage on site for at least 160 years. This means communities around new reactors might be expected to host a waste site for almost two centuries and possibly indefinitely. (NFLA, 2010). • The EA consultation leaves communities around nuclear sites with far too many uncertainties. As well as not knowing how long waste fuel might be stored on site, or what kind of a store will be used, they don't know whether they will be required to host an encapsulation facility, with its associated risks, or even an Intermediate Level Waste incinerator. Communities on transport routes don't know when waste may be transported through them, and some unsuspecting community may be asked to host a centralised storage and encapsulation facility at some point in the future. (NFLA, 2010). • If the nuclear industry is not required to prove they have a safe disposal route for wastes until after the planned reactors are built, then a powerful financial momentum would be created towards allowing the reactors to operate – and so produce waste fuel for which there was no long term safe management route. (NFLA, 2010). • The EA Assessment Reports fail to fully analyse the NDA's 'Disposability Assessment' reports and the Requesting Parties responses. Instead they postpone dealing with outstanding disposability issues to some unspecified time in the future. This is unacceptable. (NFLA, 2010).

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		• The consultation documents fail to acknowledge other work by the EA which states that it is possible that an acceptable safety case for a GDF cannot be made. (NFLA, 2010). • If a new build programme is much larger than around 6 new reactors, two sites for Geological Disposal Facilities are likely to be sought – doubling the risk to the UK population. (NFLA, 2010). • At present it is quite apparent the nuclear industry would not be able to dispose of new build reactor wastes safely. It would be wholly irresponsible to wait until such wastes are created to confirm this. Unless and until the nuclear industry are able to demonstrate that new reactor wastes could be disposed of safely there should be no further steps taken towards the development of new reactors. (NFLA, 2010). • It is imperative that the regulators proactively seek to inform, engage and encourage a wider and participative consultation before proceeding to take any final decisions on the acceptability of the proposed designs. (BANNG, 2010). • The regulators must make an unambiguous declaration that GDA approval will not proceed unless and until detailed, credible and verifiable information and evidence is provided to enable a robust safety case to be made. (BANNG, 2010). • Regulators must suspend the GDA process until such time as there is adequate information provided on how the wastes arising from new build will be managed and there is in place a long-term management solution that is scientifically robust and socially acceptable. (BANNG, 2010) • Estuarial locations have a more limited capacity and the impacts of cooling water on marine ecosystems in such shallow and enclosed locations is liable to be much greater than if discharges occur to open sea. Thus, estuarial sites should be withdrawn from any further consideration in the GDA process. (BANNG, 2010). • It is imperative that the GDA analysis takes into account the impacts of climate change and that unless the regulators are fully satisfied that nuclear activities can be safely and securely operated on coastal sites for the indefinite future the GDA should not approve any designs for new nuclear power stations. (BANNG, 2010). • There are questions over the precise nature of this consultation and how the outcomes will be decided for the generic design assessment process which is not legally binding. (Greenpeace, 2010). • EA should make clear exactly how this particular process fits in with other regulatory and policy

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		making processes e.g. Nuclear national policy statement, Justification, HSE/NII GDA, and planning processes. (Greenpeace, 2010). • The EA does not fully explain how all aspects of waste disposal - including essential intermediate steps and processes (e.g. spent fuel encapsulation) - will take place. (Greenpeace, 2010). • The EA consultation appears to take too much at face value in terms of industry 'proposals' which are not firm plans and which are liable to change. In other words, the EA appears to accept industry proposals as firm plans – which they are not. This fact should be fully reflected in the document. (Greenpeace, 2010). • The application does not define a 'reactor' and so does not give an indication of what doses may arise from either separate practices (i.e. only a single reactor operation) or cumulative doses from a number of nuclear facilities e.g. two reactors on a single site, spent fuel stores and encapsulation (spent fuel packaging) plants. (Greenpeace, 2010). • The consultation, the first and last of its kind within the GDA process, overburdens the reader with information. It assumes access to documents (including computers and printers) as well as a level of knowledge this is unreasonable. As such it cannot be deemed a truly public consultation. (Greenpeace, 2010). **Conclusions** To date, many core issues and questions raised by key stakeholders in response to consultations relating to nuclear 'Justification'; 'Strategic Siting Assessment'; 'Fixed Price Unit' for rad-waste; and the draft 'National Policy Statement', have not been satisfactorily addressed or answered by Government Departments and Regulators. For complex issues with uncertain futures, a key goal of consultation is to bring people together, and keep them together, in order to ensure that better decisions are made in the future. For people to be able to trust in the governance and regulation of nuclear risk, it is critically important for all new nuclear build consultations to be more than 'tick-box' exercises. Otherwise, the risk is that 'DAD' (decide-announce-defend) will simply metamorphose into UNCLE (unlimited nuclear consultation leading to exhaustion) In the context of moves to greater public involvement and engagement that underpins the concept of the 'Big Society' - and given the environmental, economic, and political high-stakes relating to all proposed new nuclear build decisions - the EA must acknowledge, address, and respond in detail to all the issues raised by stakeholders concerning the Consultation on Radioactive Waste Discharges and Disposals from

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		New Nuclear Power Stations. Any failure to do so would leave the Regulators and, hence, Government vulnerable to legal challenge and lead to hostility and mistrust of any future energy policy decision.
GDA151	Greenpeace	The respondent provided a document, available to see on our website. We provide below the covering note and an extract from the document: *Please find attached Greenpeace's response to the Agency's consultation on GDA Consultation Document for UK EPR and GDA Consultation Document for AP1000. The Government will today launch a revised Nuclear National Policy Statement. Given this we reserve the right to make further comment if any information released by the Government has a bearing on the EA's consultation on the GDA.* **Main points in summary:** • The consultation includes a draft interim 'Statement of Design Acceptability (SODA). This , or a final SODA, could subsequently be issued as 'advice' to 'requesting parties' (RPs) - the nuclear reactor vendor or operating companies. It is premature for the EA to be considering issuing such advice when the designs for reactors/associated facilities, as well waste and spent fuel management and disposal plans, are so far from completion The consultation should be withdrawn and undertaken only if and when designs are complete and waste management proposals become firm plans which could be implemented. • Questions arise over the precise nature of this consultation and how any resulting 'advice' issued as part of the Generic Design Assessment (GDA) process (which is not legally binding) might impact on future licensing and permitting processes by the Environment Agency (EA) and/or Nuclear Installations Inspectorate. • It is not clear how advice or other statements made as a result of the GDA process fit in with other processes such as the imminent consultation on the revised Nuclear National Policy Statement (and Parliamentary scrutiny) as well as processes which will be undertaken by the Infrastructure Planning Commission (IPC). • The consultation relies on information from a vendor/operator group (Areva and EDF for the EPR) but in the case of Westinghouse (AP1000 reactor) only from a vendor company. It is not clear how any EA 'advice' will be acted on by potential operators of an AP1000. • The consultation does provide a clear-cut definition of a ‘reactor design’ and exactly what that encompasses in terms of reactors and other facilities essential to reactor operations and waste management. As a result of this, the consultation does not give an indication of what cumulative

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		doses may arise from *all* the practices inherently linked to reactor operations e.g. two reactors on a single site, spent fuel stores and encapsulation (packaging) plants. • The EA does not explain precisely when and where all aspects of waste management and disposal including essential intermediate processes, such as spent fuel encapsulation, will take place. It seems much reliance is placed on industry 'proposals' becoming firm plans which will be implemented. Potentially significant changes to current industry proposals for waste and spent fuel management are not fully explained in the document. Nor is it explained how this may impact on any site-specific planning processes and input by local communities and authorities. This consultation should be withdrawn due to the lack of firm plans for waste and spent fuel management. • The consultation cannot be called a truly public consultation. This is the first of its kind within the GDA process. It overburdens the reader with information and assumes the public will be able to access all relevant documents (as well as the use of computers and printers) as well as a sufficient level of knowledge to interpret the available data. This is an unreasonable assumption.
GDA153	Low Level Radiation and Health Conference	The respondent provided two documents, these may be seen on our website, the contents of the second document which represent a summary are reproduced below: 1. Given the inadequacy of some of the information provided – particularly concerning the disposal of a range of wastes we would suggest no SODA be given. 2. Inadequate particularly with reference to the Spent Fuel. 3. Our concerns would be responses to future reductions in radiation doses levels and the current reassessment of the new radiation paradigm (NOTE workshop due to report in October 2010). 4. Ditto 5. Ditto 6. Solid radioactive waste 7. Spent Fuel 8. Monitoring of radioactive waste 9. Radioactive discharges 10. Abstraction of water

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		11. Non-radioactive discharges to water – no comment 12. Pollution prevention for non-radioactive substances – concerns about heat of water 13. EPR 10 Schedule 1 activities 14. Non-radioactive wastes – no comment 15. COMAH Substances – no comment 16 Preliminary consultation on acceptability of the design Interim assessment not proven given lack of evidence within the documentation 17 Overall view on assessment not covered by previous questions o Lack of inclusion of consideration of **relevant legislation** o Need to provide **accessible information** which can be assessed by wide section of the public o A concern that the **new planning system** is untried and it is not clear how it will operate – eg consideration of waste issues. This is too important an issue to be subject to an uncertain process o The documentation does not refer to other possible **changes** in the pipeline such as those with regard to radiation does limits o "*There should be no commitment to a large programme of nuclear fission power **until*** (emphasis added) *it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived, highly radioactive waste for the indefinite future*" The Flowers Report, Royal Commission on Environmental Pollution (flowers, 1976) o Such a method for HLW has not been demonstrated – see references below: o *Rock Solid? A scientific review of geological disposal of high-level radioactive waste*, Helen Wallace (Sept 2010) o *Issues Register,* one hundred plus issues about Geological Disposal yet to be addressed. (Nuclear Waste Advisory Associates 2010)
GDA154	West Somerset Council and Sedgemoor District Council	The respondent provided a detailed document, available to see on our website, an extract is provided below and other extracts have been placed against the relevant questions above: **Introduction**

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		West Somerset Council and Sedgemoor District Council (hereafter referred to as the authorities) have provided below a joint response to the Environment Agency's consultation on Generic Design Assessment inviting comments on EDF and AREVA's UK EPR reactor design and on Westinghouse's AP1000 reactor design. In the context of Generic Design Assessment, the authorities are mindful that the Environment Agency wish the consultation to focus on providing a response to candidate designs, with the ultimate intention of providing a statement about the acceptability of the designs. While this is acknowledged as separate from any issues relating to consideration of any future application for Environmental Permits for specific sites, we note that caveats may be attached to the Statement of Design Acceptability, and that applications for Environmental Permits may afford consideration of the GDA process. As such, while a number of our observations and responses relate to local issues, currently considered by the EA as more appropriate for consideration with regards to Environmental Permit applications, we consider it wholly appropriate to address these at the current stage to ensure that important local issues are afforded due consideration.
GDA157	Stop Hinkley	The respondent provided a document, available to see in full on our website, the following is an extract and is the summary of the document. Other extracts have been included against relevant questions above. **Summary of the Stop Hinkley response** Our group is concerned primarily over the health impacts a twin reactor EPR would have on local communities. We are dismayed that the consultation document does not discuss the scientific debate over the risk model which governs the routine discharges from nuclear reactors. We are also concerned about the potential risks from accidental discharges and leaks caused by the management of the plants by EdF whose track record in France and the UK has become increasingly poor. We have no faith in the nuclear waste and spent fuel strategy espoused by the consultation. EPR sites such as Hinkley Point look set to become de facto nuclear dumps as the spent fuel will remain there for generations. Those who are deciding these strategies will be long gone with future generations carrying the burden of their mistaken policies. We are also opposed to the idea of incinerating intermediate level waste, which we believe comes about as the industry is under mounting pressure to reduce its escalating stockpile of solid waste. We are worried that the introduction of novel forms of stainless steel in the fabrication of the plant may not

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		withstand the passage of time and permit premature leaks. We are concerned about the high levels of fish and other sea-life which will be destroyed by the water intake process for cooling the reactors. And about the thermal plume from discharged water which will also impact on the Bristol Channel ecology. **We submit that the application should be turned down by the Environment Agency in the interests of the local and wider environment and the health of local communities.**
GDA158	Member of Public	In general, I found the Generic Design Assessment reports well prepared and objective. In general, I broadly conclude along the same lines as the EA. However, the comments I have principally relate to Questions 16 and 17. As stated early on the paramount aspect of the GDA is to "assess the acceptability of the generic environmental aspects". However, from a design theory perspective, what is not clear is whether the 'functional requirements' have been properly identified. These are different to design criteria which are essentially that which is covered in the report. One example of functional requirements is 'sustainability'. This is the issue I have put succinctly. Some of the potential GDA issues the reports identified are related to 'Decommissioning and disposal of spent fuel'. This demonstrates my point well as stated in paragraph 54, the key to identifying the functional requirements relates to "reduce the regulatory and planning risks associated with investing in new nuclear power stations". To illustrate the point further, I attach a recent paper which describes the reasoning behind identifying functional requirements. Another issue I have is with the use of the term BAT in your reports. What happened to NEEC? I believe your use of BAT should really be replaced by BATNEEC. This may relate to the incorrect use in the 2008 White Paper, but nevertheless it is important to differentiate between BAT and BATNEEC as they could imply different solutions. Equally, the White Paper appears to use ALARA rather than ALARP. These terms are often used interchangeably, but in the UK, ALARP is preferred over ALARA and indeed is enshrined in statutory instruments such as those relating to the Tolerability of Risk. Equally, I would not equate BATNEEC with BPEO as the two could follow different agenda. In essence, I believe EA should aim to be consistent and correct in the use of terms. In the field that I am a specialist and have expertise, Carbon Science and in particular C14, I would concur with the EA, but I would mention that the effective half life of C14 in the atmosphere is a lot less than the actual half life given the absorption rates in to the formation of the natural sediments beds. An interesting analogy is to look at the rate at which C14 generated from the Atomic Tests in the 1950s and rate of decline to

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		equilibrium levels since. Thus, we are talking about tens of years rather than thousand.
GDA161	Somerset County Council	The respondent provided a letter, available to see on our website, the following is an extract from the letter, other extracts appear against relevant questions above: We understand that the Environment Agency's conclusions for the EPR (pending consultation) are that an interim Statement of Design Acceptability (SODA) may be issued, subject to two potential GDA issues covering decommissioning and the disposability of spent fuel following longer term interim storage. Somerset County Council (SCC) has the following specific points to make regarding the consultation document on the AREVA/EDF UK EPR: Resolution Plan It is understood that the potential GDA issues for the AREVA/EDF proposal do not involve any fundamental concerns, but are based on the Environment Agency's requirement for a more evidence based approach. The Environment Agency state that a Resolution Plan will be produced by the parties involved to set out how AREVA/EDF will meet the Environment Agency's requirements. At this point in the consultation, the Resolution Plan has not been produced. Somerset County Council would like to request publication of the plan when it is complete so that it is aware of the how the issues are intended to be resolved and the timescales involved. The consultation document is highly technical and it is therefore difficult for communities to draw out the key issues that are important to them. Whilst we understand that many issues associated with the design of the UK EPR will be site-specific issues, more effort should be made to link these issues to the communities that will be affected by new nuclear power stations. In particular, issues that are likely to be important to communities living close to new nuclear power stations should be drawn out of the background reports and made more clear in the Consultation document
GDA163	Scottish Power	Thank you for the opportunity to participate in the Environment Agency's consultation on generic design assessment (GDA) of the AP1000 and EPR. I am responding on behalf of ScottishPower's parent company Iberdrola. Iberdrola is partnering with GDF Suez and Scottish & Southern Energy, with a view to undertaking new nuclear build in the UK. This consortium has purchased an option to develop land neighbouring the existing nuclear complex at Sellafield with a view to constructing a new nuclear power station of up to 2.6GW capacity.

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		Iberdrola is supporting Westinghouse through the GDA process, along with a number of other utilities, and we have contributed our thoughts and views on the GDA assessment to regulators during meetings on the AP1000 GDA process developed and will continue to do so. Iberdrola has also watched closely the Areva/EDF GDA process for the EPR. As a result of our existing participation in the process, we have not responded to the individual questions listed in the consultation and would instead draw your attention to the following points, which we see are the most important with respect to the GDA process. **Resolving all outstanding GDA issues** Every effort should be made to resolve all GDA issues before the end of GDA in June 2011. The aim of the GDA process was to improve clarity and certainty in the new nuclear power station regulatory process, and thus minimise the risk to developers. The regulators and the requesting parties should strive to close off any unresolved areas of risk before the end of June 2011 to ensure the maximum benefit can be taken from the GDA process. We note that where there are unresolved issues related to the technological design at the end of June 2011, EA proposes that these are to be resolved as part of site specific licensing. This places the risk with the developer of nuclear new build who will be the operator and thus the site licensee. However, in practice the amendments necessary to resolve these issues will be within the control of the designers i.e. the risk lies with the operator but the means of mitigation lies with the designer, and this is not a comfortable position for a developer of such a significant investment. This issue acts to reinforce the importance of making as much progress as possible on the GDA issues by the end of the process. **Single requesting party versus joint requesting party** From the outset, the requesting party approach for the AP1000 and the EPR has been different, where the requesting party for the AP1000 is designer, while the requesting party for the EPR is a combination of the designer and one operator. At the end of GDA, assuming each design receives a statement of design acceptability, a credible nuclear operator could use either of the two designs to progress nuclear new build in the UK. As such, there is an expectation that the EPR could be operated by others in addition to EDF. The EA should bear this in mind when considering the responses it receives in relation to certain operator specific questions, to ensure that the response provided, and the conclusion drawn, is not specific to the operator that forms part of the requesting party. For example, in order to facilitate transfer of knowledge, EDF's approach is to "*include*

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		the co-designer, the architect engineer and the future operator in the same company". Another operator may have an approach that also facilitates knowledge transfer but in a different way and this should not be excluded by virtue of the EPR requesting party's response. **Proposed discharge limits** As a credible nuclear operator, Iberdrola has considered the discharge limits for both the designs. Iberdrola was part of the working group established by Westinghouse to consider the discharge limits for the AP1000 and was an active participant in this process. We, therefore, have no further comment on the discharge limits for the AP1000. With respect to the EPR gaseous discharge levels, the proposed quarterly notification level for H-3 is very low in comparison with that for AP1000, especially in light of the fact that both technologies have the same annual limit. We understand that this proposed quarterly limit has been derived from the 'expected performance' of the EPR (excluding any contingencies for actual operational performance). As a consequence, if there are any variations in the actual operational performance of the EPR (when it becomes operational in the UK or elsewhere), this limit could imply a restriction in operation. Something similar happens with C-14. **Approach to stakeholder engagement** Clearly we have a level of involvement in the GDA process that is different from an interested member of the public, but we have experienced a GDA process that has been very transparent, allowing any interested party significant access to the detail of the process, the findings of the process and regular reports on the key indicators. It is also clear that effort has been made to adopt language in the reports that is more accessible to the public. However, this remains a very technical topic and it will not be possible to make all the detail widely understandable, for example, the discharge limits. We of course understand why some of the discharge levels are different for each of the designs, although this is something that the wider public may find odd if the reasons are not made clear e.g. the difference in output capacity. In summary, we are very supportive of the GDA process and its aim to improve clarity and certainty in the new nuclear power station regulatory process, and thus minimise the risk to developers, and would urge that this aim is borne in mind in these last few remaining months before the end of GDA in June 2011.
GDA165	Suffolk Coastal District	3. The Council would resist the option of several sites spent fuel being stored and transported to the

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	Council	Sizewell Site (para 33 of EPR-07 refers). 4. The Council would wish to be made aware of the site specific assessments when they are available for the Sizewell Site.
GDA166	Cumbria County Council	The respondent provided a document, available to see on our website, the following is an extract from that document, other extracts have been placed against questions 1, 2, 4, 5, 6 and 7: **The Management of Risks and Uncertainties** As would be expected, the approaches to radioactive waste management in the GDA process are based upon a range of national policies and strategies. Although the EA concludes that Areva/EdF and Westinghouse have provided reasonable waste and spent fuel strategies, a review of the GDA consultation document raises issues about the extent to which a robust approach is being taken to the management of the uncertainties and risks inherent in the implementation of national policies and strategies.
GDA168	Member of Public	The respondent provided a letter raising concerns about noise and vibration of new power plant. The full letter can be seen on our website.

Annex 1 – Criteria for consultation

15 This consultation follows the Government's Code of Practice. In particular, we aim to:

a) formally consult at a stage where there is scope to influence the outcome;

b) consult for at least 12 weeks with consideration given to longer timescales where feasible and sensible;

c) be clear about the consultation process in the consultation documents, what is being proposed, the scope to influence and the expected costs and benefits of the proposals;

d) ensure the consultation exercise is designed to be accessible to, and clearly targeted at, those people it is intended to reach;

e) keep the burden of consultation to a minimum to ensure consultations are effective and to obtain consultees' 'buy-in' to the process;

f) analyse responses carefully and give clear feedback to participants following the consultation;

g) ensure officials running consultations are guided in how to run an effective consultation exercise and share what they learn from the experience.

Annex 2 – List of respondents

Member of Public/Company/Organisation	ID
Arkholme with Cawood Parish Council	GDA46
Blackwater Against New Nuclear Group	GDA112
Bradwell for Renewable Energy	GDA121
Braystones Residents	GDA73
Burneside Parish Council	GDA35
Centre for Environmental Policy, Imperial College, London	GDA84
Committee on Medical Aspects of Radiation in the Environment (COMARE)	GDA129
Communities Against Nuclear Expansion (CANE)	GDA40
Communities Against Nuclear Expansion (CANE)	GDA48
Countryside Council For Wales	GDA143
Cumbria County Council	GDA166
Dept of Agriculture, Belfast	GDA54
English Heritage	GDA63
Forum 21	GDA105
Fylde Borough Council	GDA86
Greater Manchester Socialist Environment Resources Association (SERA)	GDA125
Greenpeace	GDA151
Health & Safety Executive, Nuclear Directorate	GDA76
Health Protection Agency	GDA88
Horizon Nuclear Power	GDA127
Ingleby Barwick Town Council	GDA38
Institute of Mechanical Engineers	GDA145
Joint Nature Conservation Committee (JNCC)	GDA28
Kent Against a Radioactive Environment (KARE)	GDA147
L2 Business Consulting Limited	GDA123
Low Level Radiation and Health Conference	GDA153
Maldon Town Council	GDA51
Member of Public	GDA158
Member of Public	GDA5
Member of Public	GDA18
Member of Public	GDA19
Member of Public	GDA20
Member of Public	GDA23
Member of Public	GDA25
Member of Public	GDA27
Member of Public	GDA30

Member of Public/Company/Organisation	ID
Member of Public	GDA32
Member of Public	GDA36
Member of Public	GDA42
Member of Public	GDA52
Member of Public	GDA58
Member of Public	GDA78
Member of Public	GDA92
Member of Public	GDA119
Member of Public	GDA66
Member of Public	GDA62
Member of Public	GDA56
Member of Public	GDA50
Member of Public	GDA44
Member of Public	GDA41
Member of Public	GDA139
Member of Public	GDA135
Member of Public	GDA168
NNB Genco	GDA106
Nuclear Consultation Group	GDA149
Nuclear Industry Association	GDA117
Nuclear Legacy Advisory Forum (NuLeAF)	GDA80
Nuclear Technology Subject Group of the Institution of Chemical Engineers	GDA67
Nuclear Waste Advisory Associates (NWAA)	GDA133
Nuclear-Free Local Authorities (NFLA)	GDA82
Parents Concerned About Hinkley	GDA21
People Against Wylfa B (PAWB)	GDA95
RWE NPower	GDA137
Safety and Reliability Society	GDA107
Scottish Power	GDA163
Scottish Water	GDA111
Seafish	GDA90
Sellafield Ltd	GDA126
Shepperdine Against Nuclear Energy (SANE)	GDA114
Shepway District Council	GDA100
Somerset County Council	GDA161
Springfields Site Stakeholder Group	GDA96
Stop Hinkley	GDA157
Studsvik UK Ltd	GDA131

Member of Public/Company/Organisation	ID
Suffolk Coastal District Council	GDA165
Suffolk County Council	GDA72
Swedish NGO Office for Nuclear Waste Review, MKG	GDA60
Waldringfield Parish Council	GDA102
Welsh Assembly Government	GDA141
West Somerset Council and Sedgemoor District Council	GDA154

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