Ministry of Defence

JSP 518
Regulation of the Naval Nuclear Propulsion Programme

Part 1: Directive

Foreword by Director Defence Safety & Environment Authority

The Secretary of State for Defence (SofS) through his Health, Safety & Environmental Protection (HS&EP) Policy Statement requires each Top Level Budget Holder or Trading Fund Agency Chief Executive to be the Senior Duty Holder for the safety of defence activities conducted in his/her area of responsibility in addition to his/her wider HS&EP responsibilities. They are required to set down and implement HS&EP management arrangements for activities in their area of responsibility. The policy statement also requires there to be organisational separation between those who conduct defence activities and those who provide regulation, so that the latter are independent whilst being part of the Department.

As Director Defence Safety & Environmental Authority (DSEA), I am responsible for providing defence regulatory regimes for HS&EP in the Land, Maritime, Nuclear and Ordnance domains where there are exemptions, derogations or dis-applications from legislation or where UK legislation does not apply. The regulations set out in this JSP are mandatory and full compliance is required. It is the responsibility of commanders and line managers at all levels to ensure that personnel, including contractors, involved in the management, supervision and conduct of defence activities are fully aware of their responsibilities.

The Defence Nuclear Safety Regulator (DNSR-Head) is empowered to develop and promulgate the regulatory regime for the Defence Nuclear Programme and enforce these regulations.

J C S Baker
Director Defence Safety & Environment Authority
Defence Authority for Health Safety & Environmental Protection
July 2014

Foreword by Head, Defence Nuclear Safety Regulator

The Defence Nuclear Programme (DNP) comprising the Naval Nuclear Propulsion Programme (NNPP) and the Nuclear Weapon Programme (NWP) of the Ministry of Defence is a fundamental component of the UK's defence posture and has been so for many years. Those involved in these programmes, including contractors' staff, have a duty of care to their workforces, the public and the environment.

Nuclear and radiological safety and environmental protection are important, not only because of legal and moral responsibilities, but also because their effective management safeguards defence capability.

DNSR has produced this Joint Services Publication (JSP 518) for the Regulation of the NNPP and JSP 538 for the NWP. Together they define and promulgate the nuclear regulatory regime (Part 1 - Policy, Requirements, Processes and Part 2 - Guidance) for the DNP. Those responsible for implementing these programmes are to comply with the requirements, and DNSR is tasked with regulating in accordance with this policy.

Cdre Mike Robinson
Head, Defence Nuclear Safety Regulator, DNSR Hd
July 2014

Preface

How to use this JSP

1. JSP 518 is intended as the primary source documentation describing independent Defence safety regulation of the Naval Nuclear Propulsion Programme. It is designed to be used by staff responsible for both the regulation of activities delivered by Duty Holders and the staff of the Duty Holders within the Defence Nuclear Programme. This JSP contains the policy and direction on nuclear safety regulation and guidance on the processes involved and best practice to apply. This JSP will be reviewed at least annually.

2. The JSP is structured in two parts:

   a. Part 1 - Directive, which provides the direction that must be followed in accordance with Statute, or Policy mandated by Defence or on Defence by Central Government.

   b. Part 2 - Guidance, which provides the guidance and best practice that will assist the user to comply with the Directive(s) detailed in Part 1.

Related JSPs	Title
JSP 538	Regulation of the Nuclear Weapon Programme
JSP 471	Defence Nuclear Emergency Response
JSP 815	Defence Health, Safety and Environmental Protection

Coherence with other Defence Authority Policy and Guidance

3. Where applicable, this document contains links to other relevant JSPs, some of which may be published by different Defence Authorities. Where particular dependencies exist, these other Defence Authorities have been consulted in the formulation of the policy and guidance detailed in this publication.

Training

4. Details of relevant training applicable to the DNP including safety regulation are identified in individual post specifications and/or terms of reference and the associated training plans developed against the Nuclear Competence Framework, published by the Head of the nuclear profession.

Further Advice and Feedback- Contacts

5. The owner of this JSP is DSEA-DNSR. For further information on any aspect of this guide, or questions not answered within the subsequent sections, or to provide feedback on the content, contact:

Job Title/E-mail	Project focus	Phone
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Chapter 1 Introduction

Structure, Purpose and Scope of the JSP

1. This JSP defines and promulgates the policy, requirements and guidance for nuclear and radiological safety and environmental protection management of Naval Nuclear Propulsion Programme (NNPP) activities.

2. The JSP is divided into two parts: Part 1, consisting of Chapters 1, 2 & 3, states regulatory requirements and Part 2 contains regulatory guidance. In the context of the 'Hierarchy of Environment and Safety Publications' set out in JSP 815 'Defence Environment and Safety Management', Part 1 of this JSP is at 'Level 2', and Part 2 is at 'Level 3'.

3. Where possible, detailed material in this JSP is presented in Annexes linked to the relevant text in the Chapters.

4. Chapter 1 gives the background to the MOD's internal, non-prescriptive, goal-setting regulation of defence nuclear activities and the basis for that regulation. It explains briefly the objectives of MOD regulation, including the provision of assurance to senior levels of the Department.

5. Chapter 1 explains how and why regulation is based upon the Authorisation of operators to conduct defence nuclear activities during the life cycle of Naval Reactor Plant (NRP) which have an impact on nuclear and radiological safety. It explains why this Authorisation mirrors the licensing approach of the statutory regulator (Office for Nuclear Regulation, ONR).

6. Chapter 2 sets down the regulatory requirements for the Authorisation of operators for specific roles in the life cycle of the NRP. These are principally the Authorisation Conditions (AC), which mirror Licence Conditions (LC) applied by the statutory regulator. There are additional Defence Nuclear Safety Regulator (DNSR) requirements arising directly from the mobile nature of the NRP and the wider remit of DNSR. These are presented as Further Authorisation Conditions (FAC).

7. The AC are generally presented in phrases such as "the Authorisee shall make and implement arrangements for…" Such arrangements then form part of the Authorisee's Compliance Statements against the AC (ACCS) against which they can be inspected.

8. Chapter 3 outlines the regulatory processes which DNSR uses to set requirements, agree Authorisees' arrangements to meet those requirements, and monitor Authorisees' adherence to those arrangements. This supports DNSR's objectives to seek and provide assurance and permission activities.

9. Part 2 contains guidance to Authorisees, Accreditee, Duty Holders and DNSR staff.

10. Part 2 also provides guidance to DNSR staff to inform regulatory judgements when deciding whether to permission activities. This is principally done through the adoption of HSE Safety Assessment Principles (SAP) which, subject to occasional interpretation provided, DNSR considers are not inimical to the NNPP.

11. Subsidiary Guidance to Regulators is provided by the ONR in the form of Technical Assessment Guides (TAG). DNSR contributes to and adopts the ONR Safety Assessment Principles and Technical Assessment Guides, however where these documents do not address specific issues associated with the NWP and DNP then specific NWR Safety Assessment

Principles (NWR SAP), Interpretation of SAP for NNP Application, and DNSR Technical Assessment Guides (DNSR TAG) are developed and published.

12. The structure of this document is shown diagrammatically below (Figure 1).

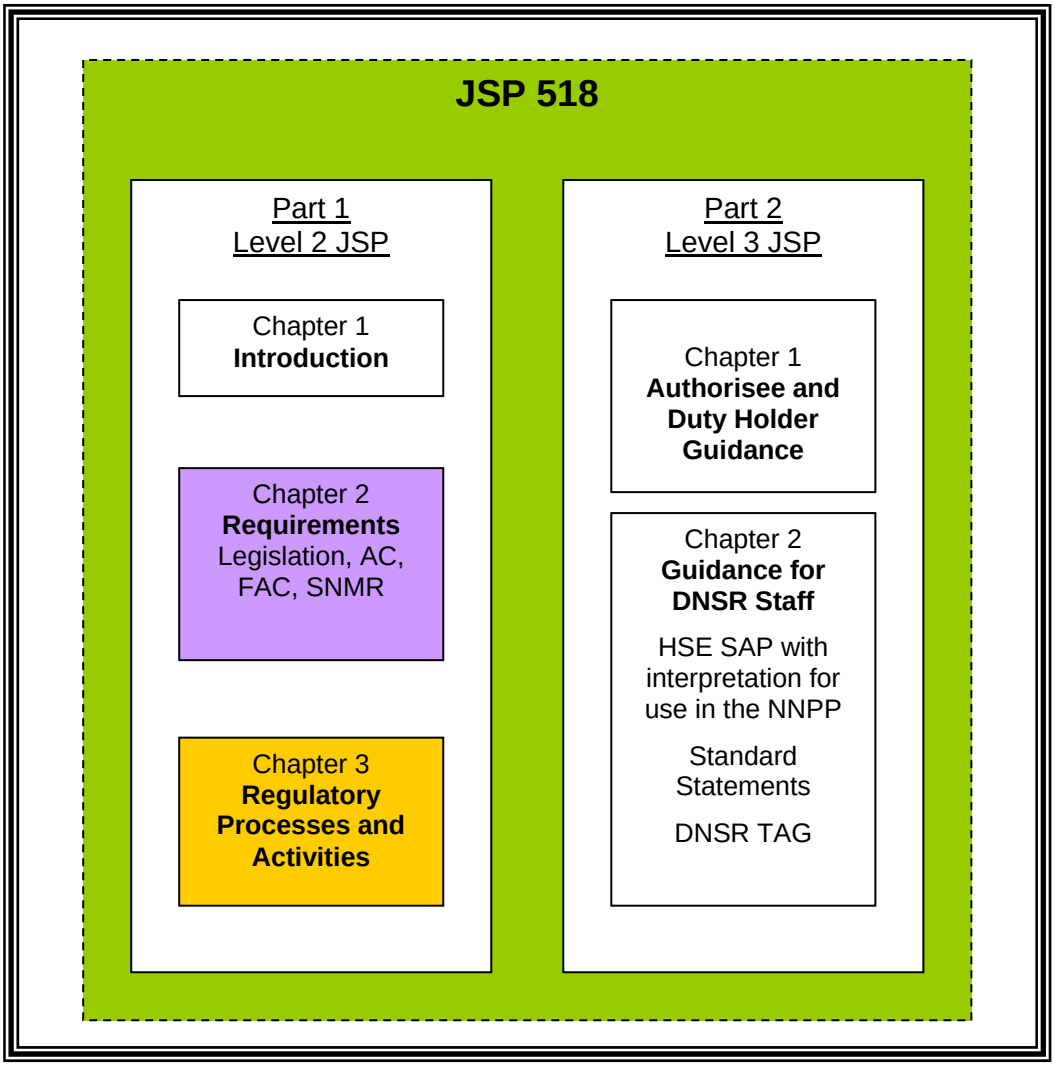

Figure 1 – Schematic of the Structure of JSP 518 and Regulatory Policy

Background and Outline Legal Framework for MOD Regulation of the Naval Nuclear Propulsion Programme

13. The Secretary of State (SofS) for Defence's Policy Statement[1] on Health, Safety and Environmental Protection (HS&EP) matters in Defence requires that:

a. We minimise work related fatalities, injuries, ill-health and adverse effects on the environment, and we reduce health and safety risks so that they are as low as reasonably practicable (ALARP).

b. Within the United Kingdom (UK) we comply with all applicable HS&EP legislation.

[1]See JSP 815, Defence Health, Safety and Environmental Protection and DNSR Strategy 2013-2023 Version 1.0 dated 31 Oct 13.

c. Overseas we apply our UK arrangements where reasonably practicable and, in addition, respond to host nations' relevant HS&EP expectations.

d. Where Defence has exemptions, derogations or disapplications from HS&EP legislation, we maintain Departmental arrangements that produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation.

14. The fundamental requirement for regulation by DNSR of the DNP, and specifically the NNPP for JSP 518, derives from the fact that it is a defence programme performing operations and activities both in the UK and overseas with potential nuclear and radiological consequences, albeit with very low probability of occurrence, which have exemptions from particular UK legislation.

15. The primary national legislation under which nuclear sites are regulated is the Energy Act 2013 (TEA), the Health and Safety at Work etc. Act 1974 (HSWA), and the 1965 and 1969 Nuclear Installations Act (NIA). Part 3 of TEA, which covers nuclear regulation, came into force on 1st April 2014, and formally established the Office for Nuclear Regulation (ONR) as an independent regulatory body. ONR is the enforcing authority for TEA, HSWA and NIA for GB nuclear sites. Certain sections of the NIA are relevant statutory provisions of TEA, including NIA Section 1, under which ONR licenses operators of nuclear sites. This includes contractor-managed defence nuclear sites, but excludes sites under Crown control.

16. Relevant subsidiary legislation, from which the MOD is not exempt, comprises the Ionising Radiation Regulations, 1999, (IRR), and the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR). ONR regulates all MOD nuclear sites, both contractor operated and those under Crown control, and Nuclear Powered Warships (NPW) within UK territorial waters against this legislation.

17. Regulations governing the transport of radioactive material are based on standards developed by the International Atomic Energy Agency (IAEA). In the DNP, the transport of radioactive materials is regulated by DNSR.

18. The DNP is the beneficiary of a unique relationship with the United States of America which is formalised by the UK/US 1958 Agreement on the Uses of Atomic Energy for Mutual Defence Purposes and the 1963 Polaris Sales Agreement as amended for Trident. The nuclear reactor technology transferred under the 1958 agreement is used in the UK only for NPW propulsion.

The Objectives of MOD Regulation of the NNPP

19. The primary objective of defence regulation of the NNPP is to assure that the SofS's HS&EP policy is implemented whilst taking into account the mobility of the naval reactor plant.

20. Compared to a statutory nuclear regulator, DNSR has an additional factor to consider when judging the acceptability of the standards of nuclear safety and environmental protection achieved in the NNPP. This is to balance the potentially competing demands of nuclear safety and available submarine capability (including Continuous at Sea Deterrence (CASD)). This can be a factor in judgements on As Low As Reasonably Practicable (ALARP) arguments. DNSR's regulatory stance will take account of this factor.

21. There have been occasions where factors relating to defence strategy (or 'military imperative') have formed part of a Duty Holder's ALARP argument. Whilst DNSR has the discretion to take factors relating to strategic imperatives into account in decisions on permissioning, these cases are expected to be exceptional, and DNSR's fundamental expectation is for a robust ALARP case to be made without recourse to such arguments.

22. A secondary objective of Defence regulation is to provide assurance to SofS that nuclear safety in the NNPP is, as far as is reasonably practicable, at least as good as that required by statute.

23. To achieve these objectives the MOD has appointed a Head of Defence Nuclear Safety Regulator (DNSR-Hd) and staff, collectively titled DNSR. Under DNSR-Hd, Nuclear Weapon Regulation is managed by the Nuclear Weapon Regulator and Deputy Head, DNSR-NWR, and Nuclear Propulsion Regulation is managed by the Nuclear Propulsion Regulator DNSR-NPR.

Authority and Delegations

24. The SofS's Policy Statement on HS&EP and JSP 815 makes clear that it is the responsibility of those charged with conducting defence activities to carry them out safely in accordance with the law and MOD requirements. It applies across Defence, both to activities conducted directly by MOD employees (which includes the Armed Forces) and those conducted by contractors.

25. The SofS for Defence formally delegates, via the Permanent Under Secretary (PUS), responsibility for conducting defence activities safely through the management structure of the MOD, and he separately charges PUS with oversight of the Department's safety and environment management arrangements and the responsibility for Defence regulation of them. In respect of nuclear and radiological safety in the DNP, PUS requires the Director, Defence Safety and Environment Authority (D DSEA) to appoint (and be line manager for) the Regulator. This is DNSR-Hd, who is provided with a letter of delegation giving him authority, inter alia and in extremis, to require operations to cease within the DNP. This authority is further delegated to the DNSR-Nuclear Propulsion Regulator (DNSR-NPR) who reports to DNSR-Hd. The DNSR Deputy Head (DNSR-DepHd) also reports to DNSR-Hd.

26. D DSEA chairs the Defence Nuclear Regulation Stakeholder Committee (DNRSC), the senior regulatory forum considering nuclear and radiological safety in the DNP. D DSEA is a member of the Defence Environment and Safety Committee (DESC) which, as the senior Departmental committee for HS&EP chaired by PUS, provides both advice to PUS and support to SofS in the implementation of the Department's safety and environmental protection strategy, objectives and targets.

Regulation and Authorisation

27. Defence regulation follows from the empowerment of DNSR by letter of delegation from the appropriate authority (paragraph 25 above). It is in the interest of both the regulator and regulated (and above all in the interest of safety) that both work to agreed arrangements so that their interactions may be understood and harmonised.

28. A system of Authorisation has been determined as fundamental to DNP safety management arrangements. Authorisation is a system analogous to licensing under the NIA. The requirements are defined in 36 AC which are as far as possible identical to the 36 LC applied under statute to operators of nuclear installations. As required by DNSR's regulatory responsibilities, 4 Further Authorisation Conditions (FAC) address issues unique to the DNP (e.g. the mobility of submarine and weapon).

29. The AC and FAC are applied to an operator responsible for managing the risk presented to the workforce, the public and the environment by the nuclear assets and activities under his managerial control and who is in day-to-day control of operations. In the NNPP, operators need the support of an Authorisee responsible for through-life safety to discharge their responsibilities for nuclear safety.

30. DNSR-Hd formally Authorises a NNPP operator designated as Authorisee, for particular activities associated with the NNPP, at the 1* post-holder level through the issue of an Authorisation Certificate. Authorisees are required to develop and maintain robust safety management systems consistent with the AC and additional requirements set out in Chapter 2 of this JSP.

31. One of the functions of the Naval Reactor Plant Authorisee (NRPA) is to act as the Approving Authority (AA) with responsibility for safety of the NRP across life cycle boundaries, and delivery of a Design Authority (DA) function for the plant; this is shown diagrammatically by the colour coding in Figure 2.

32. The responsibilities of the AA are outlined in the NRPA Certificate of Authorisation. Given the mobile nature of the NRP and the different organisations with responsibility at different phases of the plant's life, these responsibilities are crucial for the delivery of adequate standards of safety. Therefore the AA is regulated with the same formality as those with direct responsibility for day-to-day safety on account of the contribution they make to NNPP safety. While the responsibility for the safe operation of the NRP rests with the Authorisee, DNSR expects that there is a formal relationship between all Authorisees and the AA and that the AA provides clear, authoritative and coherent advice and guidance to Authorisees.

33. The transport of radioactive material between sites is regulated in a slightly different manner, and is based on the internationally agreed approach defined in the IAEA Safety Standard 'Regulations for the Safe Transport of Radioactive Material'. See Chapter 2 paras 11-14.

The Defence Regulator

Purpose, Vision and Mission[2]

34. DNSR's vision is "Nuclear capability which is demonstrably safe and available to meet Defence needs" and the purpose is described in the mission statement "To regulate the nuclear hazards of the Defence Nuclear Programme, as a trusted independent regulator in Defence". DNSR regulates through the CADMID[3] life cycle which in the NNPP covers all life cycle phases of UK NRP, associated Special Nuclear Materials and Research and Development (R&D) in support of naval nuclear reactors. DNSR-DepHd/NPR also contributes to the development of the safety objectives for the R&D programme.

35. In discharging his duties, DNSR-Hd:

a. owns and maintains regulatory policy;

b. gains assurance about safety and environmental protection by inspection and permissioning of activities, inspection of arrangements, review of safety justifications and assessment of emergency response exercises;

c. provides information about safety and environmental protection by reports, including an annual report to PUS, about DNSR's activities and conclusions;

d. assures the SofS for Defence about nuclear safety and environmental protection in the DNP.

[2] DNSR Strategy 2013-2023, Version 1.0 dated 31 October 2013.
[3] Smart Acquisition CADMID Cycle: Concept; Assessment; Design; Manufacture; In-service: Disposal.

Relationship with Other Regulators

36. DNSR liaises and works closely with other Defence Regulators grouped within DSEA with common interests. Principally these are the Defence Maritime Regulator (DMR) and the Defence Ordnance Munitions and Explosives Safety Regulator (DOSR). One aim is to align regulatory policy and processes and assessment effort for efficiency and to minimise impact on operators. However, the minimisation of risk of operation of platforms where multiple hazards are present is a more significant long term aim, facilitated by the formation of the DSEA.

37. The principal interface which DNSR has with any other regulator is with ONR. The MOD/HSE Agreement[4] describes the overall working relationships between the MOD and ONR. DNSR works closely with ONR in a process of joint regulation of relevant areas to minimise the impact on operators and ensure, so far as is practicable, that they are not subject to differing requirements or processes. ONR looks to DNSR-DepHd/NPR as the "Competent Authority" in respect of Naval Reactor Plant design and DNSR-DepHd/NPR provides ONR with any clarification it requires on hazards arising therefrom. ONR will not seek to influence naval reactor design. A 'Letter of Understanding' (LoU) between DNSR and ONR captures the working relationship.

38. ONR has its regulatory duties defined through statute while DNSR duties are founded on MOD policy partly in response to exemptions from statute and SofS's wider responsibilities. ONR's legal responsibilities require it to regulate compliance with regulations subordinate to HSWA from which there are no MOD exemptions. These include the Ionising Radiations Regulations (IRR) and the Radiation (Emergencies Preparedness & Public Information) Regulations. ONR does not regulate compliance with the Nuclear Installations Act (NIA) when MOD is in control. Authorisation covers the range of activities that are licensed, but also activities where exemptions apply.

39. The nuclear safety Duty Holder for submarines varies with life cycle phase. Authorisation seeks adequate arrangements to safeguard through-life nuclear safety and preserve design intent across the interfaces between the various Duty Holders in the NNPP. That apart, the aims, processes and techniques of Authorisation are akin to licensing.

40. Regulation of the DNP is most effectively achieved by DNSR and ONR operating a system that ensures complete and seamless oversight of all DNP activities. In some cases joint regulation occurs but generally ONR and DNSR gain assurance from the other's activities. The DNSR/ONR relationship is formally monitored through routine bipartite meetings to monitor adherence to the spirit of the LoU.

41. The ONR process of regulation and enforcement against LC is mirrored by the DNSR process of Authorisation against AC. If an activity is both Licensed and Authorised, the same compliance statements should satisfy both regulators where the LC and AC are identical. Similarly the process of regulatory inspection of Licensee/Authorisee and the assessment of its safety documentation may be undertaken jointly by ONR and DNSR to ensure a common regulatory response and approach.

42. DNSR's responsibility for the regulation of some radioactive discharges means that it also has interfaces with environmental regulators, the Environment Agency (EA) in England and the Scottish Environment Protection Agency (SEPA) in Scotland. DNSR is the sole regulator for:

a. liquid and gaseous radioactive discharges while at sea;

b. gaseous radioactive discharges while the NPW is alongside.

[4] JSP 815 Annex M, General Agreement Between the Ministry of Defence and the Health and Safety Executive.

43. In keeping with SoS's policy declaration of equivalence with civil standards where reasonably practicable, DNSR regulates these discharges in keeping with the principles applied by the environmental regulators, and agrees appropriate levels with the EA/SEPA.

44. The safety management arrangements for liquid discharges alongside NNPP sites and berths are regulated by ONR, with DNSR assistance, under the auspices of the IRR, and any subsequent environmental discharges are regulated directly by the appropriate environmental agencies. The respective regulatory responsibilities may be summarised as follows:

a. Radioactive discharges from defence-related Licensed sites and MOD Authorised sites:

(1) the discharges are regulated by EA/SEPA. (NB The discharges may include radioactive material originating on-board NPWs and transferred ashore for processing);

(2) EA/SEPA also regulate the associated radioactive waste management arrangements from an environmental protection perspective;

(3) For Authorised sites, DNSR regulates the associated radioactive waste management arrangements from a nuclear safety perspective;

(4) ONR regulates the associated radioactive waste management arrangements from a health and safety perspective in line with ONR guidance[5] and Joint Guidance shared by EA, SEPA and ONR..

b. Radioactive discharges from NPWs directly to the environment:

(1) the discharges (comprising gaseous discharges alongside and liquid and gaseous discharges at sea) and the associated radioactive waste management arrangements from both environmental protection and nuclear safety perspectives are regulated by DNSR;

(2) in keeping with SofS's policy commitment so far as reasonably practicable to operate to standards equivalent to those applied by the civil regulators, this DNSR regulation is in accordance with the regulatory principles adopted by EA/SEPA and DNSR liaises closely with the civil regulators on their application;

(3) ONR regulates the associated radioactive waste management arrangements from a health and safety perspective, principally in accordance with IRR99 requirements.

45. The relationship between DNSR and EA/SEPA is one of interfaces; there is not the same overlap of responsibilities as with ONR. It should be noted that:

a. the environmental regulators operate a more prescriptive regime based on limits than the nuclear safety regulators, though legally, the ALARP requirement applies to environmental discharges as well as nuclear safety;

b. NNPP discharges, both from shore establishments and from NPWs, are very small in absolute and relative (to nuclear industry generally) terms.

[5] Technical Assessment Guide NS-TAST-GD-024: Management of Radioactive Materials And Radioactive Waste On Nuclear Licensed Sites.

46. DNSR is the Competent Authority for transport packages in the DNP and interfaces as necessary with ONR's Radioactive Materials Transport Team, the Department for Transport (DfT), and other government departments.

Regulatory Requirements

47. DNSR owns, sets and maintains regulatory requirements for the management of nuclear and radiological safety and environmental protection in the NNPP. Part 1, Chapter 2 of this JSP sets out the requirements and Part 2 includes related guidance.

Regulatory Processes

48. The principal processes which DNSR employs to achieve regulation are similar to those employed by the statutory nuclear regulator such as:

a. Authorisation – equivalent to licensing;

b. Inspections;

c. Assessment (of arrangements, safety documentation etc.);

d. Permissioning (of activities with implications for present and future nuclear safety).

49. DNSR Inspections to verify Authorisee and Duty Holder adherence to ACCS are the principal activity of the DNSR Inspectors. Assessments are carried out on a sampling basis taking account of (for example):

a. the level of nuclear hazard presented by the issue to be assessed;

b. the level and independence of assessment effected by the Authorisee's Internal Safety Authority and made available to DNSR.

50. Regulatory control over activities deemed to have a significant nuclear safety implication is effected by imposing regulatory hold-points. Progression beyond these points, be they project stages, continued plant operation, or maintenance activities (for example) then requires DNSR permission; permissioning is then the DNSR process to apply leverage to Authorisees and Duty Holders. Mature Authorisees with strong internal safety management which impose their own hold-points will be subject to fewer, or combined, regulatory hold-points.

51. DNSR Inspectors maintain a routine relationship with operators and Duty Holders based on protocols between DNSR and the relevant manager(s). DNSR-DepHd/NPR produces a programme level intervention strategy for each regulated area from which DNSR Inspectors produce an intervention strategy and plans for each Authorisee. These include inspection and assessment programmes covering all activities to gain the necessary assurance for permissioning of activities (where this form of regulatory leverage is applied). These programmes cover:

a. inspection of activities and arrangements – inspectors may wish to see how procedures are applied in practice and to verify compliance with regulatory requirements (e.g. AC);

b. review of nuclear safety justifications (guided by SAP) - to enable activities to be permissioned;

c. assessment of emergency response exercises – to examine the effectiveness of emergency arrangements in a dynamic environment.

52. In the event of an accident in the NNPP, DNSR-Hd becomes Head of the Safety Cell within the HQ Nuclear Emergency Response Organisation in London.

53. Part 1, Chapter 3 of this JSP sets out the related processes in more detail and Part 2 provides common guidance.

Regulatory Expectations

54. This JSP sets out requirements and guidance against which to judge the acceptability of all activities within the NNPP with respect to nuclear and radiological safety and environmental protection. It requires each Authorisee to provide and maintain written justifications addressing the safety of activities conducted with NRP within their area of the NNPP, and the AA to provide and maintain intrinsic safety justifications for NRP. DNSR expects safety justifications to be developed, to be comprehensive in scope, to be of a standard equivalent to industry good practice, and to provide a depth of analysis appropriate to the risks. In accordance with HSWA, DNSR expects it to be clearly demonstrated that the risks to health from any DNP activity have been reduced so far as is reasonably practicable. The purpose of the DNP, the nature of defence operations and equipment and the potential that (for example) nuclear and maritime safety priorities may be different, are recognised to be factored into such demonstrations.

55. DNSR does not seek to be prescriptive about the construction of management arrangements or safety justifications provided their coverage is fit for purpose. Comprehensive written Compliance Statements are expected to be produced and maintained to justify Authorisation or Accreditation (e.g. as Duty Holder or DA) status. DNSR may exercise discretion in determining the acceptability of activities within the NNPP with respect to nuclear and radiological safety and environmental protection.

56. DNSR endorses the long-standing Defence position (which mirrors that of the statutory regulator) that Authorisees, with the support of the Department, should maintain a comprehensive capability to respond to NNPP emergencies, even where assessments may show that such emergencies are highly unlikely. This approach takes account of the societal concerns associated with a nuclear emergency within the NNPP. Authorisees must maintain a nuclear emergency response capability and periodically demonstrate its adequacy.

57. DNSR places considerable emphasis on seeking assurance that Authorisees, the AA and Duty Holders have a robust internal challenge capability. DNSR expects the provision of a proportionate internal regulator and/or assurance function with appropriate skills and resources, which undertakes meaningful compliance inspections.

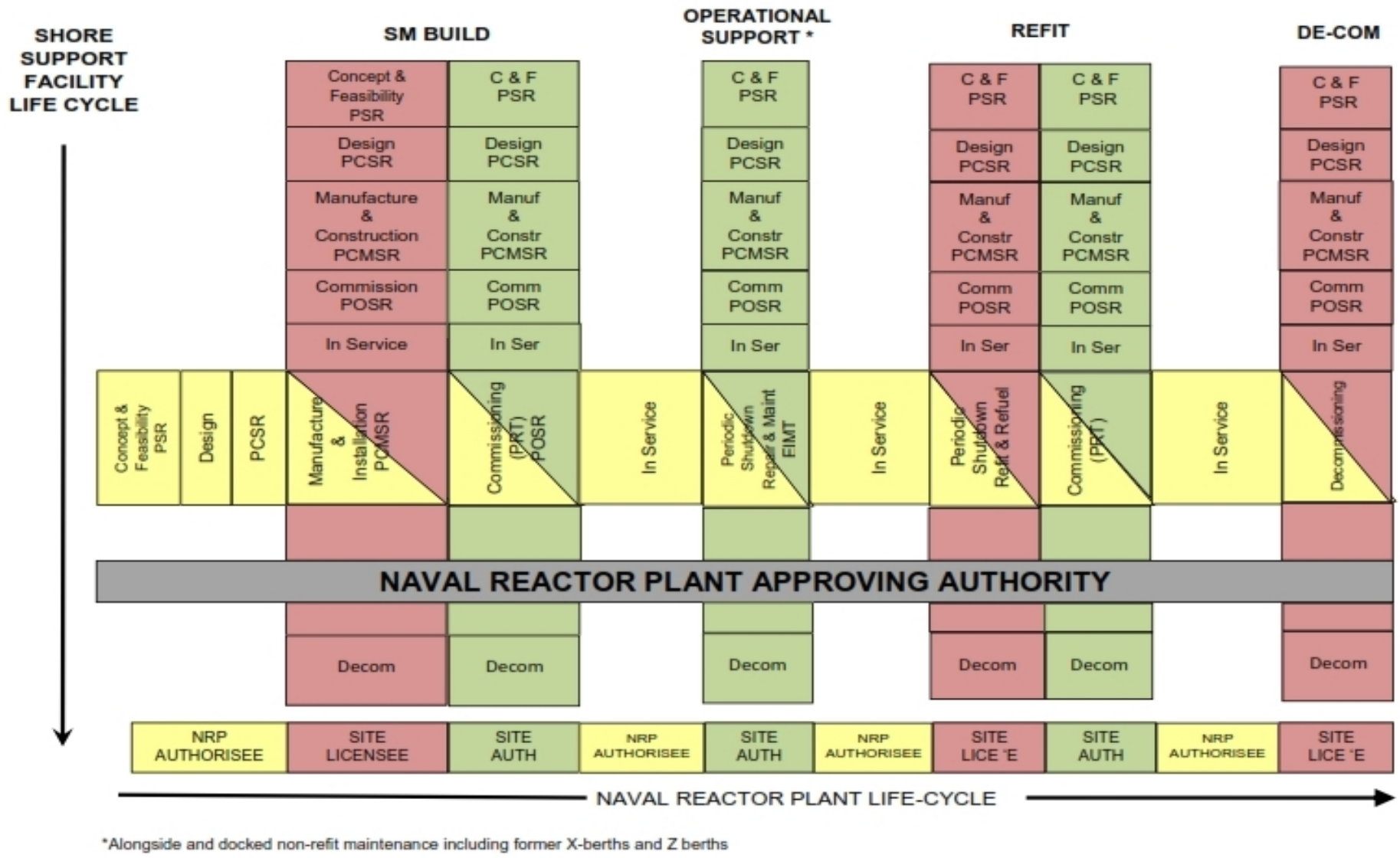

Figure 2 – Diagrammatic Representation of NNPP Through-Life Responsibilities

Chapter 2 Requirements

Legislation

1. The law of the United Kingdom applies to the Defence Nuclear Programme (DNP) and is to be complied with; it is the Duty Holder's responsibility to determine applicable legal requirements. Principal legislation relating to nuclear and radiological safety (indicating exemptions, disapplications or derogations relating to the Defence Nuclear Programme) is listed in Annex A. A fundamental feature of UK law (as required by the Health and Safety at Work etc Act 1974 (HSWA)) is that risk to the workforce and the public is to be reduced So Far As Is Reasonably Practicable (SFAIRP also expressed as "As Low As Reasonably Practicable" ALARP).

Policy of the Secretary of State for Defence

2. The Secretary of State (SofS) for Defence's Policy Statement on Health, Safety and Environmental Protection (HS&EP) matters in Defence requires that:

a. We minimise work related fatalities, injuries, ill-health and adverse effects on the environment, and we reduce health and safety risks so that they are as low as reasonably practicable (ALARP).

b. Within the United Kingdom (UK) we comply with all applicable HS&EP legislation.

c. Overseas we apply our UK arrangements where reasonably practicable and, in addition, respond to host nations' relevant HS&EP expectations.

d. Where Defence has exemptions, derogations or disapplications from HS&EP legislation, we maintain Departmental arrangements that produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation.

3. In the policy statement SofS requires the Permanent Under Secretary to ensure that responsibility for health, safety and environmental protection aligns with the mandates of top-level budget (TLB) holders to manage defence activities in their delegated areas. TLB holders with responsibilities for delivery of the DNP are Fleet Commander (for Navy Command) and Chief of Defence Materiel (for Defence Equipment and Support (DE&S)). In DE&S at senior level the responsible managers are Chief of Materiel (Fleet) and Director Submarines. TLB holders are further identified as Senior Duty Holders to provide specific accountability on the management of risk to life from activities in their area of responsibility, appointing Operating and Delivery Duty Holders as appropriate.

4. JSP 815 requires that those responsible for defence capability development including the expected future commanding officers or managers are to address HS&EP factors from the earliest stages. Thus a Duty Holder, Authorisee or Accreditee within the DNP is to engage as appropriate with DNSR as early as possible noting that the DNSR view may be sought during the investment scrutiny process.

Nuclear and Radiological Safety and Environmental Protection MOD Regulatory Requirements

Introduction

5. The Nuclear Installations Act 1965 is the principal legislation governing the use of a site for nuclear activities. Under the Act, before conducting nuclear activities, the operator of a site

must be granted a licence by the Office for Nuclear Regulation (ONR); this is subject to management arrangements being made to satisfy 36 Licence Conditions (LC). A similar process, called Authorisation, is applied in the DNP where an otherwise licensable activity is exempt. In addition to nuclear activities on a site, this has to accommodate the mobility of the nuclear powered (and armed) warships whilst operated at sea (which includes operational berths) and the transport of nuclear weapons between sites. It is also to include the discharge of radioactive materials to the environment where this is exempted[6]. An Authorisation Certificate is provided defining the scope of activities Authorised. Both licensing and Authorisation are non-prescriptive, permissioning regulatory regimes suitable for high hazard activities.

Authorisation

6. Authorisation Conditions (AC) for the DNP are stated in Annex B; these mirror LC. Specific attributes of the DNP (e.g. the organisational structures and the mobility of naval reactor plant and nuclear weapons) and the remit of DNSR (e.g. encompassing environmental protection and transport) require conditions in addition to those of LC. Four Further Authorisation Conditions (FAC) are stated in Annex C.

7. Authorisees are to make and implement management arrangements that satisfy the safety requirements of each relevant AC and FAC, and are to maintain a compliance statement for each Condition outlining how their arrangements meet the requirements. Authorisees are responsible for managing the risk that the nuclear assets under their control present to the workforce, the public and the environment. Authorisees are to demonstrate day-to-day control of activities for which they are responsible. If an Authorisee is to cease conducting Authorised activities, a process leading to removal of Authorisation is to be undertaken by consultation between the Authorisee and DNSR.

8. Authorisees in the DNP are detailed in Table 1.

Scope of Major Defence Nuclear Programme Through Life Activities[7]	**Naval Nuclear Propulsion Programme**	**Nuclear Weapon Programme**
Construction and first commissioning of Naval Reactor Plant	MD/BAE Systems Maritime Submarines, Barrow	
R&D, manufacture, assembly/disassembly, of nuclear weapons		MD/Atomic Weapons Establishment plc
Testing of naval reactor plant	Naval Superintendent, NRTE Vulcan	
Logistic transport of nuclear weapons		Head of Strategic Weapons Project Team
Naval base support and maintenance	Naval Base Commander, Clyde Naval Base Commander, Devonport	Naval Base Commander, Clyde
Deep maintenance (including refuelling) of naval reactor plant	MD Submarines/Devonport Royal Dockyard Limited	
Operations at sea and alongside operational berths outwith Authorised sites[8]	Head of Nuclear Propulsion	Chief Strategic Systems Executive

Table 1 – Authorisees in the Defence Nuclear Programme

[6] The Crown is exempted from the Radioactive Substances Act 1993; administrative arrangements have been agreed between MOD and the environmental agencies covering most discharges from MOD sites.
[7] A summary of the scope is provided; details are in the relevant Authorisation Certificate
[8] Navy Command is principal Duty Holder to both NP-Hd and CSSE

Design and Approval

9. The designers of Naval Reactor Plant and nuclear weapons, and those who approve them for use, are to ensure that they, and information supplied about them, are fit-for-purpose and facilitate safe conduct of activities by the Authorisees[9]. Authorisees are to provide assurance to the approvers and designers about the conduct of activities with Naval Reactor Plant and nuclear weapons so that knowledge about their condition is maintained.

10. The Approving Authority (AA) for Naval Reactor Plant is Head of Nuclear Propulsion (NP-Hd)[10]; the scope of Authorisation encompasses NP-Hd's role as AA[11]. This rôle also carries the requirement to specify and manage R&D in support of maintaining safe operation of the NRP, and gaining assurance of the quality of components in the plant to support the requirements of the safety justifications.

Transport of Radioactive Material

Transport of Radioactive Material (RAM) between Sites

11. All Duty Holders with responsibilities associated with the transport of radioactive material between sites are to comply with legislation and except where explicitly agreed with DNSR are to:

a. Comply with UK law as if no 'defence exemption' applied, with the exception that where legislation incorporates an edition of the IAEA Regulations for the Safe Transport of Radioactive Material which is earlier than the current edition then the current edition of the IAEA Regulations may be substituted.

b. Comply with any requirements of DNSR as the DNP Competent Authority.

12. UK Duty Holders with responsibilities associated with the transport of Special Nuclear Material (SNM)[12] in the DNP[13] external to Licensed or Authorised sites are to comply with the 'SNM Requirements' (SNMR) listed in Annex D to Chapter 2[14] as part of their management arrangements for safety, and to comply with FAC4 of Annex C to Chapter 2.

13. Where a UK Civil Competent Authority has issued a 'national derogation' from the requirements of legislation (in practice usually EU legislation) for civil RAM transport then, unless DNSR explicitly advises otherwise, that derogation is deemed to apply to equivalent DNP RAM transport operations.

14. Where ONR has issued 'a consent' for a DNP RAM shipment to a civil site and copy of that consent is provided to DNSR then, unless DNSR explicitly advises otherwise, an equivalent DNSR consent is deemed to have been issued[15]

On Site Transport of Radioactive Material

15. Where the transport of RAM within a site is carried out in a manner that is compliant with the requirements for off site transport, then DNSR will normally accept that process as being

[9] Section 6 of HSWA, General Duties of Manufacturers as Regards Articles and Substances for Use at Work, is relevant
[10] Technical Authority is by Rolls Royce Submarines.
[11] Note – role as Authorisee Sea quite separate.
[12] Introduction of Special Nuclear Material Requirements (SNMR) was consulted under DNSR/2/1/5 letter dated 15 May 2012.
[13] MOD Duty Holders include Head of Nuclear Propulsion in relation to the transport of reactor fuel, and Head of Strategic Weapons in relation to the transport of SNM in the NWP.
[14] Note: the text in italics following each SNMR is background material; this is not part of the requirement.
[15] This clause can be relevant to shipments to unlicensed sites.

adequately safe without additional evidence. Where on site transport of RAM is managed in a different manner the arrangements shall provide an ALARP demonstration and shall be justified in an appropriate site safety case.

Guidance

16. Guidance on interpretation of and compliance with regulatory requirements is provided in Part 2 of this JSP.

Security–Informed Nuclear Safety in the Defence Nuclear Programme (SINS)

17. In the 2006 revision of the HSE Safety Assessment Principles used by both ONR and DNSR, the class of external hazards was expanded to include “malicious acts” for the first time, recognising that the consequences of such acts could harm the workforce or the public through the release of radioactive material. In the civil programmes, the safety and security regulators have worked together to amplify their expectations of Licensees’ approach. Within the DNP the intent to commence a similar process was identified in a joint DNSR/ONR letter in January 2012 to all Authorisees/Licensees in the DNP. DNSR will expect to find appropriate considerations in safety submissions which address malicious acts as part of the normal Periodic Review of Safety (AC/LC15 arrangements) for existing facilities. Similar considerations will be required in the design of new facilities, equipment and any future reactor or reactor modification programme. In addition, against the background of SINs, DNSR will continue to develop a mutually constructive relationship with the defence security organisations to provide a joined up response to the Authorisees to ensure safety and security requirements are not considered in isolation.

Annex A to Chapter 2: Legislation

Introduction

1. A comprehensive framework of legislation exists to ensure that the UK's civil nuclear programme and DNP achieve acceptable standards of safety and environmental protection.

2. Activities within the DNP generally work within this legislative framework, but are subject to a number of exemptions, disapplications or derogations which take account of the purpose and objectives of the MOD (principally the available capability) and the physical environment in which the DNP operate. The following paragraphs provide an overview of the principal legislation applicable to nuclear and radiation safety and environmental protection in UK and British Overseas Territories. The general application of the legislation to DNP is described and the regulating authority is identified. Nothing in this Annex affects the responsibility of an Authorisee, Approving and Design Authority, or other Duty Holder for complying with applicable legislation.

International Framework

3. Nuclear safety is the subject of international co-operation and agreement through such bodies as the International Atomic Energy Agency (IAEA), the Organisation for Economic Co-operation and Development (OECD) and the International Commission for Radiological Protection (ICRP). It is also a major element of European Union (EU) policy, and is addressed in particular within the EURATOM Treaty which imposes requirements on the way in which member states conduct activities involving nuclear and radiological hazards.

4. Although it is the UK Government's position that the EURATOM Treaty does not apply to military activities, legislation emanating from EURATOM which is incorporated into national law under UK Acts of Parliament is applicable unless a Defence exemption is included in the legislation.

5. In the framework of the Treaties establishing the European Union, EU law may take the following forms:

a. **EU Legislation.** This is applicable and binding on all Member States:

(1) Directives. These bind Member States as to the objectives to be achieved and require Member States to implement national legislation to give effect to these objectives within a specified time-scale. For example, Directive 96/29/EURATOM, commonly known as the Basic Safety Standards (BSS) Directive, was implemented in part by the Ionising Radiations Regulations 1999 (see below).

(2) Regulations. These are directly applicable and binding in Member States without the need for any national legislation. For example, Council Regulations (Euratom) 3954/87 and 2218/89 set out the maximum permitted levels of radioactive contamination in foodstuffs following a nuclear emergency which are directly applicable in UK.

(3) Decisions. These are binding in all respects on those to whom they are addressed. Thus, Decisions do not require national implementing legislation. A Decision may be addressed to any or all Member States, to enterprises or to individuals;

b. **EU Recommendations, Opinions** – these are not binding on Member States.

Legal Framework in the UK

6. In UK, legislation provides the fundamental basis of safety practice. It is legislation, through an Act of Parliament or subordinate legislation, brought into force by a Secretary of State (SofS) that requires a regulatory body to be set up and provides the basis for its regulatory powers. It defines the limits of these powers and is likely to indicate some guiding directions for its implementation. Increasingly, UK legislation reflects the UK's international commitments and agreements, most notably arising from membership of the EU.

7. The detail of regulatory requirements is frequently expanded through codes of practice, guidance to the regulations, and associated documents published by bodies such as the Health & Safety Executive (HSE). Guidance can also be set out in formal statements of Government policy (White Papers) or in statutory guidance issued to regulators. However, it is legislation which provides the overall basis of regulatory provision.

8. SofS for Defence may, in the interests of national security, by a certificate in writing, exempt certain defence activities and premises from the requirements of certain Regulations.

Relevant Legislation – Health and Safety

European Communities Act 1972 (ECA)

9. The ECA is an Enabling Act which brings the UK under the legal umbrella of the European Community. The Act empowers SofS to make subordinate legislation which does not completely align with existing UK Enabling Acts. Much of the UK's modern legislation is brought into force via a combination of the powers invested in SofS by ECA and by other enabling acts. For example, the Ionising Radiations Regulations are brought into force via ECA and the Health and Safety at Work etc Act 1974 (HSWA).

Health and Safety at Work etc Act 1974

10. The Health and Safety at Work etc. Act (HSWA) introduced a framework for safety legislation and its enforcement, establishing the HSE. HSWA is an enabling act for subordinate health and safety legislation. The HSE has statutory responsibilities under the HSWA and its subordinate regulations. Equivalent responsibilities on GB nuclear sites are now delivered through the Office for Nuclear Regulation (ONR) (which includes the former Nuclear Installations Inspectorate (NII)).

11. There is no general Crown exemption from the HSWA and MOD is bound by the general duties it imposes and by regulations made under it, except where specific exemptions apply. JSP 815 sets out the arrangements by which MOD complies with HSWA, and includes the MOD/HSE General Agreement which describes how the Act is implemented in practice.

The Energy Act 2013

12. Part 3 of the Energy Act 2013 (TEA) came into force on 1st April 2014, and formally established the Office for Nuclear Regulation (ONR) as an independent regulatory body with powers and responsibilities to regulate the safety of nuclear installations, as well as to deal with civil nuclear security, transport of radioactive materials (other than for MOD purposes) and the UK's compliance with international safeguards. Certain sections of the NIA are now relevant statutory provisions of TEA rather than HSWA. TEA binds the Crown (subject to the provisions at Part 3 para 111) but has limited relevance to MOD other than to give ONR full powers on all GB nuclear sites (including Authorised sites) under all aspects of HSWA that were previously held by HSE.

Nuclear Installations Act 1965 and 1969 (NIA)

13. NIA restricts the operation of specified nuclear installations (including nuclear reactors) to bodies licensed for that purpose by ONR. Licensees are then regulated through a set of 36 Licence Conditions (LC) designed to ensure that adequate standards of nuclear safety are maintained. NIA also establishes licensees' strict liability for any harm or damage arising from their activities.

14. NIA is generally not applicable to the Crown (i.e. MOD) although Section 9 acts to apply the liability provisions referred to above as though the Act did apply. Reactors in a means of transport (which include operational Nuclear Powered Warships' (NPW) reactors) are further specifically disapplied from the Act. NIA does apply where MOD is not in direct control of activities, for example at the Atomic Weapons Establishment (AWE) and Devonport Royal Dockyard Limited (DRDL). ONR has statutory responsibilities under the NIA. DNSR regulate MOD Duty Holders who are exempt from NIA in accordance with equivalent provisions, including Authorisation Conditions which correspond to ONR Licence Conditions.

Atomic Weapons Establishment Act 1991 Amendment Order 1997

15. The Atomic Weapons Establishment (AWE) Act 1991 Amendment Order 1997 has provision for licensing by ONR but excludes application of the licensing conditions to the design of a nuclear device or any other device (other than a nuclear reactor) intended to simulate the properties of a nuclear device.

Ionising Radiations Regulations 1999 (IRR99)

16. IRR99 sets out detailed provisions for radiation protection, including prior risk assessments, dose limitation, As Low As Reasonably Practicable (ALARP), the appointment of Radiation Protection Advisers, dosimetry etc. JSP 392 (Radiation Safety Handbook) sets out the corresponding MOD policy. The Regulations are applicable to MOD, and are regulated on UK nuclear sites and Operational Berths by ONR. Outside UK, DNSR apply equivalent provisions so far as is reasonably practicable.

17. The SofS for Defence has exempted in writing foreign NPWs visiting UK in accordance with IRR99.

Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR)

18. REPPIR sets out detailed provisions for emergency preparedness and response in relation to holdings of large quantities of radioactive material, including hazard identification and risk evaluation (HIRE) and, in the case of a reasonably foreseeable radiation emergency (as defined), the provision of prior information to both identified civil authorities and the public, operators' and off-site emergency plans, and tests (i.e. exercises) of those plans. REPPIR applies to fixed sites and transport by rail only, and is generally applicable to the Defence Nuclear Programme. However, assessments have established that a radiation emergency is not reasonably foreseeable in the case of large parts of the NWP, which restricts the applicable provisions in these cases. Further, there are specific disapplications for transport in a Type B package or in accordance with Special Arrangements (as defined) which have the effect of disapplying the Regulations in respect of rail transport of used fuel.

19. REPPIR is regulated by ONR. DNSR acts as Competent Authority in this regard, providing assurance to ONR that the detailed NNPP and NWP design information contained within the HIREs is valid and has been used appropriately. Outside UK, DNSR applies equivalent provisions so far as is reasonably practicable.

20. Without a time limit, the SofS for Defence has exempted from REPPIR, in writing, foreign NPWs visiting UK[16].

The Justification of Practices Involving Ionising Radiation Regulations 2004

21. The Regulations implement an EU Directive requirement for any new class or type of practice resulting in exposure to radiation to be justified by the benefits arising in relation to any corresponding health detriment. Such determinations are made by the Department of Environment, Food and Rural Affairs and/or the devolved administrations (the Justifying Authorities). For the purpose of these Regulations a new class or type of practice is one introduced since May 2000. There is also provision for an existing practice to be reviewed in the event that new and important evidence about its efficacy or consequences is acquired.

22. Associated guidance emphasises the principle underlying the Directive (and thereby the Regulations) that justification is to be applied generically rather than at the level of individual uses of a practice, and would therefore relate for example to the operation of the NNPP as a whole. Since both of these broadly stated practices were carried out prior to May 2000, the Regulations have no practical impact on the programmes subject in principle to the following two provisos.

a. Substantial design or other changes sufficient to alter the overall balance between the benefits and detriments of the programme could in principle require a new justification decision.

b Similarly, new and important evidence about the efficacy or consequences of the programme could in principle require a new justification decision.

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (amended 2011)

23. These Regulations set out detailed provisions for the transport of radioactive material, mainly by reference to international regulations for the carriage of dangerous goods by road[17] and by rail[18]. The Regulations apply to MOD but include wide-ranging exemptions in respect of instruments of war (as defined), which have the effect of largely disapplying the Regulations in relation to the transport of defence nuclear material. Regulatory responsibility for the transport of radioactive (class 7) materials is split between the SofS for Defence (for defence nuclear material) and the SofS for Energy and Climate Change (for non-defence nuclear material). DNSR acts as the Competent Authority on behalf of the SofS for Defence, whilst ONR acts as the Competent Authority on behalf of the SofS for Energy and Climate Change. DNSR regulates the transport of defence nuclear material which is exempt from the Regulations using equivalent provisions, including acting as the Competent Authority for the approval of packages to be used for such transport.

Relevant Legislation – Environmental Protection

Environmental Permitting (England and Wales) Regulations 2010 (EPR10), and Radioactive Substances Act 1993 (RSA93)

24. In England and Wales RSA93 has been replaced by EPR10, while in Scotland and Northern Ireland RSA93 continues to provide the basis for the registration of the keeping and

[16] "Exemptions from UK Legislation in Respect Of Visiting Forces" SofS Certificate of Exemption dated 30 September 2006 issued under reference MSU 3/3/10S dated 2 October 2006.
[17] The European agreement concerning the international carriage of dangerous goods by road (ADR)
[18] Regulations covering international carriage of dangerous goods by rail (RID)

use of radioactive material and of mobile radioactive apparatus, and for the control of radioactive waste accumulation and discharge/disposal.

25. EPR10 Schedule 23 Parts 2 & 3 implement the European Basic Safety Standards Directive and as such provide the basis for permitting the keeping and use of radioactive material and of mobile radioactive apparatus, and for the control of radioactive waste accumulation and discharge/disposal. EPR10, the principal regulations, have been amended several times since issue, notably (in respect of radioactive materials) by the Environmental Permitting (England and Wales) (Amendment) Regulations 2011 which provided an entire new Schedule 23, and Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2011, which provided clarification of regulations 4 and 16. Schedule 23 does not apply in the case of MOD sites where MOD is in direct control of relevant activities, but MOD has agreed to comply with the provisions of EPR10 by administrative procedures. Schedule 23 does apply where MOD is not in direct control of activities, for example at AWE and Devonport Royal Dockyard Limited (DRDL). Regulation is by the Environment Agency (EA)[19].

26. EPR10 Schedule 23 includes exemptions in respect of the keeping and use of radioactive material and the accumulation of radioactive waste on a nuclear licensed site. In this case ONR regulates under NIA. Equivalent exemptions for MOD Authorised non-licensed sites have been included in the MOD agreement with EA. Regulation is by DNSR under provisions equivalent to NIA (see above). The agreement with EA also excludes from consideration the very low level discharges of liquid and gaseous radioactive waste from NPWs directly to the environment. Again, regulation is by DNSR using equivalent provisions.

27. EPR10 Schedule 23 Part 5 provides for the implementation of council Directive 2003/122/EURATOM, 'the HASS Directive'. In England and Wales EPR10 fully revokes the High-Activity Sealed Radioactive Sources and Orphan Sources Regulations 2005. Schedule 23 Part 5 sets out detailed provisions for the registration, management and control of high-activity sealed radioactive sources (as defined). The directive applies to MOD and related Duty Holders to the extent that Schedule 23 applies, either statutorily or by agreement (see above). Regulation is by EA. In the case of radioactive material held on a licensed site, again ONR regulates under NIA. For MOD Authorised non-licensed sites DNSR regulate under provisions equivalent to NIA.

28. In Scotland and Northern Ireland RSA93 has been substantially amended by the Radioactive Substances Act 1993 Amendment (Scotland) Regulations 2011 and the Radioactive Substances Exemption (Scotland) Order 2011. Similar provisions are made for Northern Ireland. The Act does not apply in the case of MOD sites where MOD is in direct control of relevant activities, but MOD has agreed to comply with the provisions of the Act by administrative procedures.

29. The Act includes exemptions in respect of the keeping and use of radioactive material and the accumulation of radioactive waste on a nuclear licensed site. In this case ONR regulates under NIA. Equivalent exemptions for MOD Authorised non-licensed sites have been included in the MOD agreement with SEPA. Regulation is by DNSR under provisions equivalent to NIA (see above). The agreements with EA and SEPA also exclude from consideration the very low level discharges of liquid and gaseous radioactive waste from NPWs directly to the environment. Again, regulation is by DNSR using equivalent provisions.

[19] Note – from 1 April 2013, Natural Resources Wales (NRW) took over the functions previously carried out by the Environment Agency (EA) in Wales.

High Activity Sealed Radioactive Sources and Orphan Sources Regulations 2005 (HASS)

30. In England and Wales these regulations are fully revoked by the EPR10 (see above), but remain in place in Scotland and Northern Ireland. The HASS Regulations set out detailed provisions for the registration, management and control of high-activity sealed radioactive sources (as defined). The Regulations act by amending RSA93, and therefore apply to MOD and related Duty Holders to the extent that RSA93 applies, either statutorily or by agreement (see above). Regulation is by SEPA. In the case of radioactive material held on a licensed site, again ONR regulates under NIA. For MOD Authorised non-licensed sites DNSR regulates under provisions equivalent to NIA.

Nuclear Reactor (Environmental Impact Assessment of Decommissioning) Regulations 1999, amended 2006 (NR(EIAD)R)

31. NR(EIAD)R sets out provisions requiring an environmental impact assessment to be carried out prior to beginning the decommissioning of a nuclear reactor, and submission of the assessment to ONR for agreement for the work to proceed. The Regulations are applicable to MOD although there is provision for SofS to exempt on a case-by-case basis projects serving national defence purposes. In the unlikely event DNSR would regulate by application of equivalent provisions.

Relevant Legislation – Visiting Forces

32. There are a number of pieces of legislation that govern the use of UK berths by NPW of other nations, including:

a. Visiting Forces Act 1952. Defines Visiting Forces and acknowledges customary International Law. In essence Visiting Forces are exempt from UK domestic legislation under state immunity.

b. Ionising Radiation Regulations 1999. The Secretary of State for Defence has exempted visiting forces from the provisions of IRR99 as permitted under regulation 40 (2).

c. Radiation (Emergency Preparedness and Public Information) Regulations 2001. The Secretary of State has exempted visiting forces from the provisions of REPPIR as permitted under regulation 18(2).

33. Notwithstanding statutory exemption, within UK, DNSR regulates berths and facilities that support visiting NPW as though they were occupied by a UK NPW but does not extend this to the vessel itself.

Overseas

34. Gibraltar is a British Overseas Territory (BOT) and is subject to EU Directives etc. through the UK. Separate legislation has been enacted covering radiation protection (Ionising Radiation Regulations 2004) and Emergency Preparedness (Radiation (Emergency Preparedness and Public Information) Regulations 2004). The provisions are very similar to the corresponding UK legislation described above but with certain key differences. The legislation is applicable to MOD. Regulation is by the Government of Gibraltar Competent Authority, identified as the Minister with responsibility for the environment in the case of Gibraltar REPPIR.

35. At BOT berths where the off-site arrangements are the responsibility of the UK military authorities (e.g. Diego Garcia and, to a more limited extent, the Falkland Islands), DNSR will assess these arrangements using REPPIR-equivalent procedures.

Contracted Support

36. It is a fundamental duty of the MOD/Secretary of State (SofS) under law that the risk to life of anyone conducting or affected by Defence activities is reduced So Far As Is Reasonably Practicable (SFAIRP) also expressed as "As Low As Reasonably Practicable" (ALARP) [Chapter 2, paragraph 1].

37. In order to declare that risks are ALARP and safety duties met, the MOD, as the operator and controller of activities giving rise to hazards, requires an appropriate knowledge and understanding of the design and operation of the equipment that it uses. This responsibility [to demonstrate that risks are ALARP], is discharged on behalf of the SofS through a series of safety management regimes, implemented by people with delegated authority.

38. The discharge of a part of MOD's duties through contractors does not diminish the ultimate legal responsibility of the MOD. Therefore MOD must retain sufficient intelligent customer capability within the Duty Holder chain of delegation to be suitably in control of the tasks assigned to each organisation and staff under contract and to be able to assert that nuclear risks are ALARP throughout the equipment lifecycle. This will include the ability to understand and accept the safety case, to Authorise the risks and hazards identified within it as justified and ALARP taking account of applicable evidence from contractors and, where appropriate, assurance from 2nd and 3rd parties including Regulators. The size of the intelligent customer capability needed to be the Controlling Mind will depend upon several factors including:

a. The magnitude of the hazards being managed;

b. The complexity of the equipment being used in delivery of the function;

c. The novelty of the equipment being used in delivery of the function[20];

d. The extent to which that equipment might be used to the limits of or even outwith the manufacturer's operating specification

39. This is a general requirement for all high hazard activities undertaken across MOD, though the specific nuclear requirements are outlined above.

[20] i.e. the extent to which safe operating limits and reliability can be inferred from extensive operating experience, within or outside MOD, or has to be derived from in-depth understanding by the operator of how the equipment works and interacts with other systems

Annex B to Chapter 2: MOD Authorisation Conditions

AC1 Interpretation
AC2 Marking of the Site Boundary
AC3 Restriction on Dealing with the Site
AC4 Restrictions on Nuclear Matter on the Site
AC5 Consignment of Nuclear Matter
AC6 Documents, Records, Authorities and Certificates
AC7 Incidents on the Site
AC8 Warning Notices
AC9 Instructions to Persons on the Site
AC10 Training
AC11 Emergency Arrangements
AC12 Duly Authorised and Other Suitably Qualified and Experienced Persons
AC13 Nuclear Safety Committee
AC14 Safety Documentation
AC15 Periodic Review
AC16 Site Plans, Designs and Specifications
AC17 Management Systems
AC18 Radiological Protection
AC19 Construction or Installation of New Plant
AC20 Modification to Design of Plant Under Construction
AC21 Commissioning
AC22 Modification or Experiment on Existing Plant
AC23 Operating Rules
AC24 Operating Instructions
AC25 Operational Records
AC26 Control and Supervision of Operations
AC27 Safety Mechanisms, Devices and Circuits
AC28 Examination, Inspection, Maintenance and Testing
AC29 Duty to Carry Out Tests, Inspections and Examinations
AC30 Periodic Shutdown
AC31 Shutdown of Specified Operations
AC32 Accumulation of Radioactive Waste
AC33 Disposal of Radioactive Waste
AC34 Leakage and Escape of Radioactive Material and Radioactive Waste
AC35 Decommissioning
AC36 Organisational Capability

AC1 INTERPRETATION

(1) In the Conditions set out herein, unless the context otherwise requires, the following expressions have the meanings hereby respectively assigned to them, that is to say –

"an Agreement" allows the Authorisee to proceed in accordance with its own arrangements;

"Approval". The Authorisee is required to submit its arrangements for Approval if so specified by DNSR;

"an Authorised site" is a defined site within which nuclear activities are controlled by an Authorisee in compliance with Authorisation Conditions and Further Authorisation Conditions;

"the Authorisee" is the post-holder Authorised by the Defence Nuclear Safety Regulator Head to operate in compliance with the Authorisation Conditions and Further Authorisation Conditions.

"commissioning" means the process by means of which systems and components of facilities and activities, having been constructed, are made operational and verified to be in accordance with design and to have met required safety criteria;

"a Consent" is required before the Authorisee can carry out any activity for which DNSR has so specified the need;

"a Direction" requires the Authorisee to take a particular action;

"DNSR" means the Defence Nuclear Safety Regulator;

"excepted matter" has the meaning assigned thereto in the Nuclear Installations Act 1965 (as amended) and the Nuclear Installations (Excepted Matter) Regulations 1978 made thereunder;

"experiment" means any test or non-routine activity other than an activity carried out pursuant to Conditions 21 and 28;

"installation" means "nuclear installation" and has the meaning assigned thereto in the Nuclear Installations Act 1965 (as amended);

"modification" means any alteration to buildings, plants, operations, processes or safety cases including any replacement, refurbishment or repairs to existing buildings, plants or processes and alterations to the design of plants during the period of construction;

"Notification". When so Notified, the Authorisee is required to submit information to DNSR;

"nuclear matter" and "relevant site" each has the meaning assigned thereto in the Nuclear Installations Act 1965 (as amended);

"nuclear safety committee" means any nuclear safety committee established pursuant to Condition 13 herein;

"operations" includes maintenance, examination, testing and operation of the plant and the treatment, processing, keeping, storing, accumulating or carriage of any radioactive

material or radioactive waste and “operating” and “operational” shall be construed accordingly;

“radioactive material” and “radioactive waste” each has the meaning assigned thereto in the Radioactive Substances Act 1993 and the Environmental Permitting (England and Wales) Regulations 2010, as appropriate;

“safety” refers to the safety of persons whether on or off the site;

“safety case” means the document or documents produced by the Authorisee in accordance with Condition 14 herein;

“Specification”. As Specified by DNSR, the Authorisee is required to implement the specified arrangements;

(2) In these Conditions except where the context otherwise requires –

(a) any reference to the singular shall include the plural and vice versa and any reference to the masculine shall include the feminine;

(b) any reference to any arrangement, agreement, approval, consent, direction, specification, notification or any formal communication between DNSR and the Authorisee (and vice versa) shall be deemed to be a reference to a written document;

(c) any reference to a numbered Condition is a reference to the Condition so numbered herein.

(3) Where in these Conditions DNSR requires any matter to be approved or to be carried out only with its consent or to be carried out as it directs DNSR may from time to time –

(a) modify, revise or withdraw either wholly or in part any such approval, direction or consent;

(b) approve either wholly or in part any modification or revision or any proposed modification or revision to any matter for the time being approved.

The purpose of this Condition is to ensure there is no ambiguity in the use of certain specified terms which are found in the text of the Conditions. It also contains important powers for DNSR to modify, revise or withdraw approvals etc. and to approve modifications to any matter currently approved. Where appropriate reference is made back to the relevant statutory Acts of Parliament.

AC2 MARKING OF THE SITE BOUNDARY

(1) The Authorisee shall make and implement adequate arrangements to prevent unauthorised persons from entering the site, or, if so directed by DNSR, from entering such part or parts thereof as DNSR may specify.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that, once approved, no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The Authorisee shall mark the boundaries of the site by fences or other appropriate means and any such fences or other means used for this purpose shall be properly maintained.

(5) The Authorisee shall, if so directed by DNSR, erect appropriate fences on the site in such positions as DNSR may specify and shall ensure that all such fences are properly maintained.

The purpose of this Condition is to ensure the Authorisee takes the necessary steps to prevent unauthorised access to those parts of the Authorised site that DNSR specifies in order to prevent unauthorised persons entering the site and injuring themselves or damaging safety related plant or equipment.

AC3 RESTRICTION ON DEALING WITH THE SITE

(1) The Authorisee shall not convey, assign, transfer, let or part with possession of the site or any part thereof or grant any Authorisation in relation thereto without the consent of DNSR.

The purpose of this Condition is to ensure that the Authorisee does not let, convey, assign or transfer any part of the nuclear Authorised site to a third party without seeking the permission of DNSR. This is to ensure that the Authorisee does not change the character of the activities that are Authorised and to prevent activities being carried out on the site which could put nuclear operations at risk. Also it is essential that nothing confuses the absolute responsibility of the Authorisee in respect of safety on the whole Authorised site. The Authorisee should be able to demonstrate that there are organisational procedures to prevent individuals within the company from conveying, assigning, transferring, feuing or granting any Authorisations in relation to the site or parts of the site without first obtaining the consent of DNSR.

AC4 RESTRICTIONS ON NUCLEAR MATTER ON THE SITE

(1) The Authorisee shall ensure that no nuclear matter is brought onto the site except in accordance with adequate arrangements made by the Authorisee for this purpose.

(2) The Authorisee shall ensure that no nuclear matter is stored on the site except in accordance with adequate arrangements made by the Authorisee for this purpose.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(5) For new installations, if DNSR so specifies, the Authorisee shall ensure that no nuclear matter intended for use in connection with the new installation is brought onto the site for the first time without the consent of DNSR.

The purpose of this Condition is to ensure that the Authorisee has adequate arrangements to control the introduction and storage of nuclear matter on the Authorised site to ensure safety. It also provides DNSR with powers to specify that certain types of nuclear matter cannot be brought onto the site without the consent of DNSR. This enables DNSR to intervene to ensure that, for specific activities, it can assess the adequacy of the Authorisee's arrangements before nuclear matter is brought onto the site. (Nuclear matter being nuclear fuel, radioactive waste, etc. as defined by the NI Act).

AC5 CONSIGNMENT OF NUCLEAR MATTER

(1) The Authorisee shall not consign nuclear matter (other than excepted matter and radioactive waste) to any place in the United Kingdom other than a relevant site except with the consent of DNSR.

(2) The Authorisee shall keep a record of all nuclear matter (including excepted matter and radioactive waste) consigned from the site and such record shall contain particulars of the amount, type and form of such nuclear matter, the manner in which it was packed, the name and address of the person to whom it was consigned and the date when it left the site.

(3) The Authorisee shall ensure that the aforesaid record is preserved for 30 years from the date of despatch or such other period as DNSR may approve except in the case of any consignment or part thereof subsequently stolen, lost, jettisoned or abandoned, in which case the record shall be preserved for a period of 50 years from the date of such theft, loss, jettisoning or abandoning.

The purpose of this Condition is to ensure that the transfer of nuclear matter, other than excepted matter and radioactive waste, to sites in the UK other than relevant sites:

(a) is carried out only with the consent of DNSR; and that

(b) the Authorisee has adequate records of where such nuclear matter has been sent. The Authorisee should also be able to demonstrate that there are organisational procedures to prevent individuals from inadvertently consigning such matter to non-relevant sites without first obtaining a consent from DNSR.

This Condition is aimed at ensuring not only that there is a record of where nuclear matter is sent so that DNSR can be sure that there are adequate arrangements for safely handling such material at the destination.

[Relevant sites are other Authorised sites and licensed sites.]

AC6 DOCUMENTS, RECORDS, AUTHORITIES AND CERTIFICATES

(1) The Authorisee shall make adequate records to demonstrate compliance with any of the Conditions attached to this Authorisation.

(2) Without prejudice to any other requirements of the Conditions attached to this Authorisation the Authorisee shall make and implement adequate arrangements to ensure that every document required, every record made, every authority, consent or approval granted and every direction or certificate issued in pursuance of the Conditions associated with this Authorisation is preserved for 30 years or such other periods as DNSR may approve.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(5) The Authorisee shall furnish to DNSR copies of any such document, record, authority or certificate as DNSR may specify.

The purpose of this Condition is to ensure that adequate records are held by the Authorisee for a suitable period to ensure that the safety case for operation is available at all times, and for example that design and construction information is available for decommissioning, that operational records are available to assist investigations in the event of an accident or incident and operational records are available for the statutory number of years after the cessation of operations for the purpose of assisting any claims of damage to health as a result of exposure to ionising radiation.

AC7 INCIDENTS ON THE SITE

(1) The Authorisee shall make and implement adequate arrangements for the notification, recording, investigation and reporting of such incidents occurring on the site:

(a) as is required by any other Condition attached to this authority;

(b) as DNSR may specify; and

(c) as the Authorisee considers necessary.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

The purpose of this Condition is to ensure that the Authorisee has adequate arrangements to deal with incidents that may occur on the nuclear Authorised site. It is essential that the Authorisee keeps a record of all such incidents, notifies DNSR when appropriate, investigates the cause of each incident and produces a report of the investigation to ensure that lessons are learnt.

AC8 WARNING NOTICES

(1) The Authorisee shall ensure that suitable and sufficient notices are kept on the site for the purposes of informing persons thereon of each of the following matters, that is to say:

(a) the meaning of any warning signal used on the site;

(b) the location of any exit from any place on the site, being an exit provided for use in the event of an emergency;

(c) the measures to be taken by such persons in the event of fire breaking out on the site or in the event of any other emergency;

and that such notices are kept posted in such positions and in such characters as to be conveniently read by those persons.

The purpose of this Condition is to ensure the safety of all people on the Authorised site so that they can respond appropriately and without delay to an emergency situation. The Authorisee therefore needs to ensure that all warning notices are in appropriate places to advise people on what to do in that area in the event of a fire or any other emergency (including emergency responders).

AC9 INSTRUCTIONS TO PERSONS ON THE SITE

(1) The Authorisee shall ensure that every person authorised to be on the site receives adequate instructions (to the extent that this is necessary having regard to the circumstances of that person being on the site) as regards the risks and hazards associated with the plant and its operation, the precautions to be observed in connection therewith and the action to be taken in the event of an accident or emergency on the site.

The purpose of this Condition is to ensure that the Authorisee provides adequate instructions to all persons allowed on the Authorised site so that they are aware of the risks and hazards associated with the plant and its operations, the precautions that must be taken to minimise the risks to themselves and others and the actions to be taken in the event of an accident or emergency.

AC10 TRAINING

(1) The Authorisee shall make and implement adequate arrangements for suitable training of all those on site who have responsibility for any operations which may affect safety.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

The purpose of this Condition is to ensure that all people who carry out activities during design, construction, manufacture, commissioning, operation or decommissioning of a nuclear installation which may affect safety are adequately trained for that purpose. The Authorisee is expected to ensure that the necessary training requirements are identified for each activity, that individuals who carry out these activities can demonstrate that they have received such training and that records are kept to demonstrate that individuals have been trained. This Condition is in addition to the general duty under the Health and Safety at Work Act (HSWA) s.2(2)(c) and the Ionising Radiation Regulations 1999, reg 14.

AC11 EMERGENCY ARRANGEMENTS

(1) Without prejudice to any other requirements of the Conditions attached to this Authorisation the Authorisee shall make and implement adequate arrangements for dealing with any accident or emergency arising on the site and their effects.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) Where any such arrangements require the assistance or co-operation of, or render it necessary or expedient to make use of the services of any person, local authority or other body the Authorisee shall ensure that each person, local authority or other body is consulted in the making of such arrangements.

(5) The Authorisee shall ensure that such arrangements are rehearsed at such intervals and at such times and to such extent as DNSR may specify or, where DNSR has not so specified, as the Authorisee considers necessary.

(6) The Authorisee shall ensure that such arrangements include procedures to ensure that all persons in his employ who have duties in connection with such arrangements are properly instructed in the performance of the same, in the use of the equipment required and the precautions to be observed in connection therewith.

Even though nuclear installations are designed and operated to high safety standards it is recognised that it is prudent to plan for accidents. The purpose of this Condition is to ensure that the Authorisee has adequate arrangements in place to respond effectively to any incident or accident. The Authorisee is required to have arrangements in place to cover a wide range of events from minor incidents which are restricted to on-site locations to large incidents or emergencies which can result in a significant release of radioactive material to the environment. The Condition gives DNSR the powers to ensure that the Authorisee's emergency arrangements are exercised. DNSR uses its powers to ensure the Authorisee's exercises demonstrate adequate performance to protect both workers and the public.

AC12 DULY AUTHORISED AND OTHER SUITABLY QUALIFIED AND EXPERIENCED PERSONS

(1) The Authorisee shall make and implement adequate arrangements to ensure that only suitably qualified and experienced persons perform any duties which may affect the safety of operations on the site or any duties assigned by or under these Conditions or any arrangements required under these Conditions.

(2) The aforesaid arrangements shall also provide for the appointment, in appropriate cases, of Duly Authorised Persons to control and supervise operations which may affect plant safety.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(5) The Authorisee shall ensure that no person continues to act as a Duly Authorised Person, if, in the opinion of DNSR, he is unfit to act in that capacity and DNSR has notified the Authorisee to that effect.

The purpose of this Condition is to ensure that only suitably qualified and experienced persons perform duties which may affect safety. The Authorisee is required to ensure that all activities that can affect safety are identified and the experience and qualification requirements for people to carry out these activities are defined. The Authorisee must ensure that the qualifications and experience of people match those required for the job. The Condition gives DNSR the power to remove a person from safety related work if he or she is not suitably qualified or experienced for the job.

AC13 NUCLEAR SAFETY COMMITTEE

(1) The Authorisee shall establish a nuclear safety committee or committees to which it shall refer for consideration and advice on the following:

(a) all matters required by or under these Conditions to be referred to a nuclear safety committee;

(b) such arrangements or documents required by these Conditions as DNSR may specify and any subsequent alteration or amendment to such specified arrangements or documents;

(c) any matter on the site affecting safety on or off the site which DNSR may specify; and

(d) any other matter which the Authorisee considers should be referred to a nuclear safety committee.

(2) The Authorisee shall submit to DNSR for approval the terms of reference of any such nuclear safety committee and shall not form a nuclear safety committee without the aforesaid approval.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the terms of reference of such a nuclear safety committee unless DNSR has approved such alteration or amendment.

(4) The Authorisee shall appoint at least seven persons as members of a nuclear safety committee including one or more members who are independent of the Authorisee's operations and shall ensure that at least five members are present at each meeting including at least one independent member.

(5) The Authorisee shall furnish to DNSR the name, qualifications, particulars of current posts held and the previous relevant experience of every person whom he appoints as a member of any nuclear safety committee forthwith after making such appointment. Notwithstanding such appointment the Authorisee shall ensure that a person so appointed does not remain a member of any nuclear safety committee if DNSR notifies the Authorisee that it does not agree to the appointment.

(6) The Authorisee shall ensure that the qualifications, current posts held and previous relevant experience of the members of any such committee, taken as a whole, are such as to enable that committee to consider any matter likely to be referred to it and to advise the Authorisee authoritatively and, so far as practicable, independently.

(7) The Authorisee shall ensure that a nuclear safety committee shall consider or advise only during the course of a properly constituted meeting of that committee.

(8) The Authorisee shall send to DNSR within 14 days of any meeting of any such committee a full and accurate record of all matters discussed at that meeting including in particular any advice given to the Authorisee.

(9) The Authorisee shall furnish to DNSR copies of any document or any category of documents considered at any such meetings that DNSR may specify.

(10) The Authorisee shall notify DNSR as soon as practicable if it is intended to reject, in whole or in part, any advice given by any such committee together with the reasons for such rejection.

(11) Notwithstanding paragraph (7) of this Condition, where it becomes necessary to obtain consideration of, or advice on, urgent safety proposals (which would normally be considered by a nuclear safety committee) the Authorisee may do so in accordance with appropriate arrangements made for the purpose by the Authorisee, considered by the relevant nuclear safety committee and approved by DNSR.

(12) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements described in paragraph (11) of this Condition unless the relevant nuclear safety committee has considered and DNSR has approved such alteration or amendment.

The purpose of this Condition is to ensure that the Authorisee sets up a senior level committee to consider and advise the Authorisee on matters which affect the safe design, construction, commissioning, operation and decommissioning of any installations on its Authorised site and any other matter relevant to safety. The committee must have members who are adequately qualified to perform this task including members who are independent of the Authorisee. The Condition gives DNSR the power to veto the appointment of or continued presence of any member. The committee is intended to act as a check on the Authorisee's decision making process to ensure that safety considerations are given due weight. However, the committee is intended to be purely advisory and must not be considered to have an executive function. Where the Authorisee rejects the advice of the committee the Condition requires the Authorisee to notify DNSR; in this way DNSR can investigate the justification of the Authorisee's safety related actions.

AC14 SAFETY DOCUMENTATION

(1) Without prejudice to any other requirements of the Conditions attached to this Authorisation the Authorisee shall make and implement adequate arrangements for the production and assessment of safety cases consisting of documentation to justify safety during the design, construction, manufacture, commissioning, operation and decommissioning phases of the installation.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The Authorisee shall furnish to DNSR copies of any such documentation or any such category of documentation as DNSR may specify.

The purpose of this Condition is to ensure that the Authorisee sets up arrangements for the preparation and assessment of the safety related documentation used to justify safety during design, construction, manufacture, commissioning, operation and decommissioning. The arrangements for the assessment of safety related documentation are intended to ensure an independent review of the quality and accuracy of the Authorisee's safety related decisions and activities to ensure they have been adequately justified.

AC15 PERIODIC REVIEW

(1) The Authorisee shall make and implement adequate arrangements for the periodic and systematic review and reassessment of safety cases.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The Authorisee shall, if so directed by DNSR, carry out a review and reassessment of safety and submit a report of such review and reassessment to DNSR at such intervals, within such a period and for such of the matters or operations as may be specified in the direction.

The purpose of this Condition is to ensure that the Authorisee periodically stands back and reviews the safety case for his installations. The objective of the review is to compare the safety case against modern standards to see if there are reasonably practicable improvements that could be made, to demonstrate that the plant is safe to continue to operate for the next defined period (to be agreed between Authorisee and DNSR but approximately every 10 years) and to identify any life limiting factors.

AC16 SITE PLANS, DESIGNS AND SPECIFICATIONS

(1) The Authorisee shall submit to DNSR an adequate plan of the site (hereinafter referred to as the site plan) showing the location of the boundary of the Authorised site and every building or plant on the site which might affect safety.

(2) The Authorisee shall submit to DNSR with the site plan a schedule giving particulars of each such building and plant thereon and the operations associated therewith.

(3) If any changes are made on the site which affect the said buildings, plant or operations, the Authorisee shall forthwith send an amended site plan and schedule to DNSR incorporating these changes.

(4) The Authorisee shall furnish to DNSR such plans, designs, specifications or other information relating to such buildings, plants and operations as DNSR may specify.

The purpose of this Condition is to ensure that the Authorisee indicates, using a site plan, all buildings and plant or areas which might affect safety and provides a schedule updated as necessary giving all requested information including details of each building and its associated operations. This is to ensure that not only does the Authorisee understand the content and function of all safety related buildings on his site, but it also enables DNSR to inspect the adequacy of activities and storage conditions across the site.

AC17 MANAGEMENT SYSTEMS

(1) Without prejudice to any other requirements of the Conditions attached to this Authorisation the Authorisee shall establish and implement management systems which give due priority to safety.

(2) The Authorisee shall, within its management systems, make and implement adequate quality management arrangements in respect of all matters which may affect safety.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid management systems or part or parts of the aforesaid quality management arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved management systems or approved quality management arrangements unless DNSR has approved the alteration or amendment.

(5) The Authorisee shall furnish to DNSR such copies of records or documents made in connection with the aforesaid quality management arrangements as DNSR may specify.

The purpose of this Condition is to ensure that the Authorisee establishes and implements management systems which give due priority to safety. It also requires the Authorisee to apply quality management principles to all activities which may affect safety.

AC18 RADIOLOGICAL PROTECTION

(1) The Authorisee shall make and implement adequate arrangements for the assessment of the average effective dose (including any committed effective dose) to such class or classes of persons as may be specified in the aforesaid arrangements and the Authorisee shall forthwith notify DNSR if the average effective dose to such class or classes of persons exceeds such level as DNSR may specify.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

The purpose of this Condition is to ensure that the Authorisee makes and implements adequate arrangements to assess the average effective dose for such class or classes of persons as the Authorisee may specify. It also requires the Authorisee to notify DNSR if the dose exceeds such level as DNSR may specify. This is complementary to the Ionising Radiations Regulations 1999, reg 25.

AC19 CONSTRUCTION OR INSTALLATION OF NEW PLANT

(1) Where the Authorisee proposes to construct or install any new plant which may affect safety the Authorisee shall make and implement adequate arrangements to control the construction or installation.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The aforesaid arrangements shall where appropriate divide the construction or installation into stages. Where DNSR so specifies the Authorisee shall not commence nor thereafter proceed from one stage to the next of the construction or installation without the consent of DNSR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed construction or installation and shall where appropriate provide for the submission of this documentation to DNSR.

(5) The Authorisee shall, if so directed by DNSR, halt the construction or installation of a plant and the Authorisee shall not recommence such construction or installation without the consent of DNSR.

The purpose of this Condition is to ensure that the Authorisee provides and implements adequate control over the construction and installation of new plant which may affect safety. The objective is for the Authorisee to plan the design and construction of any safety related plant. This is to ensure that before construction takes place a pre-construction safety report is produced to demonstrate the safety of the installation. The Condition gives the power to DNSR to prevent the commencement of construction until it is satisfied with the safety case and/or put hold points during the construction process to ensure the installation is being constructed in accordance with the stated intent. DNSR's control can be either through using the direct powers in the Condition or through secondary powers built into the Authorisee's arrangements.

AC20 MODIFICATION TO DESIGN OF PLANT UNDER CONSTRUCTION

(1) The Authorisee shall ensure that no modification to the design which may affect safety is made to any plant during the period of construction except in accordance with adequate arrangements made and implemented by the Authorisee for that purpose.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The aforesaid arrangements shall provide for the classification of modifications according to their safety significance. The arrangements shall where appropriate divide modifications into stages. Where DNSR so specifies the Authorisee shall not commence nor thereafter proceed from one stage to the next of the modification without the consent of DNSR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed modification and shall where appropriate provide for the submission of this documentation to DNSR.

The purpose of this Condition is to ensure that the Authorisee cannot change the design of an installation once DNSR has given its consent or agreement to construction without going through a proper design change process which assesses the modification in relation to its safety significance and defines the degree of safety justification required. The Condition gives DNSR the power to intervene and stop a modification if it believes there is inadequate safety justification.

AC21 COMMISSIONING

(1) The Authorisee shall make and implement adequate arrangements for the commissioning of any plant or process which may affect safety.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The aforesaid arrangements shall where appropriate divide the commissioning into stages. Where DNSR so specifies the Authorisee shall not commence nor thereafter proceed from one stage to the next of the commissioning without the consent of DNSR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed commissioning and shall where appropriate provide for the submission of this documentation to DNSR.

(5) The Authorisee shall appoint a suitably qualified person or persons for the purpose of controlling, witnessing, recording and assessing the results of any tests carried out in accordance with the requirements of the aforesaid commissioning arrangements.

(6) The Authorisee shall ensure that full and accurate records are kept of the results of every test and operation carried out in pursuance of this Condition.

(7) The Authorisee shall ensure that no plant or process which may affect safety is operated (except for the purpose of commissioning) until:

(a) the appropriate stage of commissioning has been completed and a report of such commissioning, including any results and assessments of any tests as may have been required under the commissioning arrangements referred to in paragraph (1) of this Condition, has been considered in accordance with those arrangements; and

(b) a safety case or cases as appropriate, which shall include the safety implications of modifications made since the commencement of construction of the plant and those arising from the commissioning of the plant, and any matters whereby the operation of the plant may be affected by such modifications or commissioning, has been considered in accordance with the arrangements referred to in paragraph (1) of this Condition.

(8) The Authorisee shall, if so notified by DNSR, submit to DNSR the safety case for the aforesaid plant or processes prepared in pursuance of paragraph (7) of this Condition and shall not commence operation of the relevant plant or process without the consent of DNSR.

When a new plant is constructed or when an existing plant is modified, it is important to commission the various systems to demonstrate they function as intended before the plant goes into routine operation. The purpose of this Condition therefore, is to ensure that the Authorisee has adequate arrangements for the commissioning of a new or modified plant or process which may affect safety.

The Condition gives DNSR powers to control various stages of commissioning. This is to ensure that the Authorisee demonstrates that the plant or modification has been completed according to the design intent, and the necessary safety implications associated with commissioning have been considered and assessed and shown to be acceptable. Usually a hold point is put at the start of inactive commissioning, i.e. testing systems before the introduction of radioactive materials, and at the start of active commissioning. This latter hold point is to ensure that the Authorisee has demonstrated that the plant is functioning and safe to allow the introduction of radioactive materials. Finally the Condition gives DNSR the power to control the commencement of routine operations by requiring the Authorisee to produce a pre-operational safety report and seek DNSR's consent to start operations.

AC22 MODIFICATION OR EXPERIMENT ON EXISTING PLANT

(1) The Authorisee shall make and implement adequate arrangements to control any modification or experiment carried out on any part of the existing plant or processes which may affect safety.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The aforesaid arrangements shall provide for the classification of modifications or experiments according to their safety significance. The arrangements shall where appropriate divide the modification or experiment into stages. Where DNSR so specifies the Authorisee shall not commence nor thereafter proceed from one stage to the next of the modification or experiment without the consent of DNSR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed modification or experiment and shall where appropriate provide for the submission of the documentation to DNSR.

(5) The Authorisee shall, if so directed by DNSR, halt the modification or experiment and the Authorisee shall not recommence such modification or experiment without the consent of DNSR.

Many accidents across all industries have been caused by modifications to operating plant or changes to processes that have not been adequately assessed. The purpose of this Condition is to ensure that the Authorisee has adequate arrangements to control all modifications to its installations on an Authorised site that may affect safety. The Condition also gives DNSR the power to control such modifications to ensure that they cannot commence until the Authorisee has adequately demonstrated the safety of the proposal. These powers can be direct or indirect via the Authorisee's own voluntary hold points. The Condition also gives DNSR the power to halt a modification or intervene at any stage in the interest of safety.

AC23 OPERATING RULES

(1) The Authorisee shall, in respect of any operation that may affect safety, produce an adequate safety case to demonstrate the safety of that operation and to identify the conditions and limits necessary in the interests of safety. Such conditions and limits shall hereinafter be referred to as operating rules.

(2) The Authorisee, where DNSR so specifies, shall refer the operating rules arising from paragraph (1) of this Condition to the relevant nuclear safety committee for consideration.

(3) The Authorisee shall ensure that operations are at all times controlled and carried out in compliance with such operating rules. Where the person appointed by the Authorisee for the purposes of Condition 26 identifies any matter indicating that the safety of any operation or the safe condition of any plant may be affected that person shall bring that matter to the attention of the Authorisee forthwith who shall take appropriate action and ensure the matter is then notified, recorded, investigated and reported in accordance with arrangements made under Condition 7.

(4) The Authorisee shall submit to DNSR for approval such of the aforesaid operating rules as DNSR may specify.

(5) The Authorisee shall ensure that once approved no alteration or amendment is made to any approved operating rule unless DNSR has approved such alteration or amendment.

(6) Notwithstanding the preceding provisions of this Condition DNSR may, if in its opinion circumstances render it necessary at any time, agree to the temporary suspension of any approved operating rule.

The safe operation of a nuclear installation results from many factors including the design of the plant, its behaviour under fault or accident conditions and the functions of the operators. It is therefore essential that the totality of these often complex interactions are fully understood. The method of doing this is to require the operator to produce a safety case to justify the operation of the installation. The purpose of this Condition is to ensure that the Authorisee produces such a safety case and that it identifies all the necessary conditions and limits that ensure that the plant is kept within parameters which ensure the safety of the plant during normal operation and fault and accident conditions.

AC24 OPERATING INSTRUCTIONS

(1) The Authorisee shall ensure that all operations which may affect safety are carried out in accordance with written instructions hereinafter referred to as operating instructions.

(2) The Authorisee shall ensure that such operating instructions include any instructions necessary in the interests of safety and any instructions necessary to ensure that any operating rules are implemented.

(3) The Authorisee shall, if so specified by DNSR, furnish to DNSR copies of such operating instructions and when any alteration is made to the operating instructions furnished to DNSR, the Authorisee shall ensure that such alteration is furnished to DNSR within such time as may be specified.

(4) The Authorisee shall make and implement adequate arrangements for the preparation, review and amendment of such operating instructions.

(5) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(6) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

The safety of a nuclear installation is influenced by the actions of people who control, maintain or service the plant. It is important given the often complex nature of the safety case for all actions carried out by people to be done in accordance with procedures derived from the safety case. It is also important that actions are not carried out on an ad hoc basis without written evidence. Therefore the purpose of this Condition is to ensure that all operations as defined in Condition 1 which may affect safety, including any instructions to implement Operating Rules, are undertaken in accordance with written operating instructions.

AC25 OPERATIONAL RECORDS

(1) The Authorisee shall ensure that adequate records are made of the operation, inspection and maintenance of any plant which may affect safety.

(2) The aforesaid records shall include records of the amount and location of all radioactive material, including nuclear fuel and radioactive waste, used, processed, stored or accumulated upon the site at any time.

(3) The Authorisee shall record such additional particulars as DNSR may specify.

(4) The Authorisee shall furnish to DNSR such copies of extracts from such records at such times as DNSR may specify.

The purpose of this Condition is to ensure that adequate records are kept regarding operation, inspection and maintenance of any safety-related plant.

AC26 CONTROL AND SUPERVISION OF OPERATIONS

(1) The Authorisee shall ensure that no operations are carried out which may affect safety except under the control and supervision of suitably qualified and experienced persons appointed for that purpose by the Authorisee.

The purpose of this Condition is to ensure that safety-related operations are carried out only under the control and supervision of suitably qualified and experienced personnel.

AC27 SAFETY MECHANISMS, DEVICES AND CIRCUITS

(1) The Authorisee shall ensure that a plant is not operated, inspected, maintained or tested unless suitable and sufficient safety mechanisms, devices and circuits are properly connected and in good working order.

A nuclear installation is designed to have multiple safety systems to provide defence in depth against maloperation, faults or accidents. It is important that at all times there are sufficient of these systems in good working order because by definition they must be able to function on demand and such instances are unpredictable. The purpose of this Condition is therefore, to ensure that there are always sufficient and operable safety mechanisms, devices and circuits to provide the necessary defence in depth.

AC28 EXAMINATION, INSPECTION, MAINTENANCE AND TESTING

(1) The Authorisee shall make and implement adequate arrangements for the regular and systematic examination, inspection, maintenance and testing of all plant which may affect safety.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) The aforesaid arrangements shall provide for the preparation of a plant maintenance schedule for each plant. The Authorisee shall submit to DNSR for its approval such part or parts of any plant maintenance schedule as DNSR may specify.

(5) The Authorisee shall ensure that once approved no alteration or amendment is made to any approved part of any plant maintenance schedule unless DNSR has approved such alteration or amendment.

(6) The Authorisee shall ensure in the interests of safety that every examination, inspection, maintenance and test of a plant or any part thereof is carried out:

(a) by suitably qualified and experienced persons;

(b) in accordance with schemes laid down in writing;

(c) within the intervals specified in the plant maintenance schedule; and

(d) under the control and supervision of a suitably qualified and experienced person appointed by the Authorisee for that purpose.

(7) Notwithstanding the above paragraphs of this Condition DNSR may agree to an extension of any interval specified in the plant maintenance schedule.

(8) When any examination, inspection, maintenance or test of any part of a plant reveals any matter indicating that the safe operation or safe condition of that plant may be affected, the suitably qualified and experienced person appointed to control or supervise any such examination, inspection, maintenance or test shall bring it to the attention of the Authorisee forthwith who shall take appropriate action and ensure the matter is then notified, recorded, investigated and reported in accordance with arrangements made under Condition 7.

(9) The Authorisee shall ensure that a full and accurate report of every examination, inspection, maintenance or test of any part of a plant indicating the date thereof and signed by the suitably qualified and experienced person appointed by the Authorisee to control and supervise such examination, inspection, maintenance or test is made to the Authorisee forthwith upon completion of the said examination, inspection, maintenance or test.

A nuclear installation, like any other complex machine, requires maintenance and if such maintenance is not carried out properly it has the potential to undermine the safety case and put the safety of the plant at risk. The purpose of this Condition therefore, is to ensure that all plant that may affect safety is scheduled to receive regular and systematic examination, inspection, maintenance and testing, by and under the control of suitably qualified personnel and that records of maintenance activities are kept.

AC29 DUTY TO CARRY OUT TESTS, INSPECTIONS AND EXAMINATIONS

(1) The Authorisee shall carry out such tests, inspections and examinations in connection with any plant (in addition to any carried out under Condition 28 above) as DNSR may, after consultation with the Authorisee, specify.

(2) The Authorisee shall furnish the results of any such tests, inspections and examinations carried out in accordance with paragraph (1) of this Condition to DNSR as soon as practicable.

The purpose of this Condition is to enable DNSR, following consultation, to require the Authorisee to perform any tests, inspections and examinations which it may specify, and to be provided with the results.

AC30 PERIODIC SHUTDOWN

(1) When necessary for the purpose of enabling any examination, inspection, maintenance or testing of any plant or process to take place, the Authorisee shall ensure that any such plant or process shall be shut down in accordance with the requirements of its plant maintenance schedule referred to in Condition 28.

(2) Notwithstanding paragraph (1) of this Condition DNSR may agree to an extension of a plant's operating period.

(3) The Authorisee shall, if so specified by DNSR, ensure that when a plant or process is shut down in pursuance of paragraph (1) of this Condition it shall not be started up again thereafter without the consent of DNSR.

It is necessary for an operating nuclear installation to be shut down at regular intervals for inspection and testing of essential components. The maintenance schedule will define the required intervals. The purpose of this Condition is, therefore, to ensure that the plant is shut down in accordance with the plant maintenance schedule and these important examination and maintenance activities are carried out. The Condition also gives DNSR the power to intervene and require the Authorisee to seek DNSR's consent to restart operations following the completion of the necessary maintenance.

AC31 SHUTDOWN OF SPECIFIED OPERATIONS

(1) The Authorisee shall, if so directed by DNSR, shut down any plant, operation or process on the site within such period as DNSR may specify.

(2) The Authorisee shall ensure that when a plant, operation or process is shut down in pursuance of paragraph (1) of this Condition it shall not be started up again thereafter without the consent of DNSR.

If DNSR has concerns about the safety of any nuclear installation and the Authorisee is unable or unwilling to provide the necessary safety justification for continued operation, it must have the power to order the shut down of the plant or process. The purpose of this Condition is to give DNSR the power to instruct the Authorisee to shut down any plant, operation or process within a given period. Following a direction to shut down the Authorisee will require a consent from DNSR to restart operations.

AC32 ACCUMULATION OF RADIOACTIVE WASTE

(1) The Authorisee shall make and implement adequate arrangements for minimising so far as is reasonably practicable the rate of production and total quantity of radioactive waste accumulated on the site at any time and for recording the waste so accumulated.

(2) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(3) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(4) Without prejudice to paragraph (1) of this Condition the Authorisee shall ensure that radioactive waste accumulated or stored on the site complies with such limitations as to quantity, type and form as may be specified by DNSR.

(5) The Authorisee shall, if so specified by DNSR, not accumulate radioactive waste except in a place and in a manner approved by DNSR.

The purpose of this Condition is to ensure that the Authorisee has adequate arrangements to ensure that the production and accumulation of radioactive waste on the site is minimised. The Condition also gives DNSR the power to ensure that radioactive waste is stored under suitable conditions, and that adequate records are kept to enable DNSR to monitor the management of radioactive waste on nuclear Authorised sites.

AC33 DISPOSAL OF RADIOACTIVE WASTE

(1) The Authorisee shall, if so directed by DNSR, ensure that radioactive waste accumulated or stored on the site is disposed of as DNSR may specify and in accordance with an authorisation granted under the Radioactive Substances Act 1993, or in accordance with a permit granted under the Environmental Permitting (England and Wales) Regulations 2010.

An Authorisee may wish to store radioactive waste on its site rather than dispose of it even when a suitable disposal facility is available. The purpose of this Condition is to give DNSR the power to direct the Authorisee to dispose of radioactive waste which is stored on the Authorised site. DNSR would only use this power in conjunction with the appropriate Agency.

In this context "the appropriate Agency" means, in relation to England, the Environment Agency, in relation to Wales, Natural Resources Wales, and, in relation to Scotland, the Scottish Environment Protection Agency.

AC34 LEAKAGE AND ESCAPE OF RADIOACTIVE MATERIAL AND RADIOACTIVE WASTE

(1) The Authorisee shall ensure, so far as is reasonably practicable, that radioactive material and radioactive waste on the site is at all times adequately controlled or contained so that it cannot leak or otherwise escape from such control or containment.

(2) Notwithstanding paragraph (1) of this Condition the Authorisee shall ensure, so far as is reasonably practicable, that no such leak or escape of radioactive material or radioactive waste can occur without being detected, and that any such leak or escape is then notified, recorded, investigated and reported in accordance with arrangements made under Condition 7.

(3) Nothing in this Condition shall apply to discharges or releases of radioactive waste in accordance with an approved operating rule or with disposal authorisations granted under the Radioactive Substances Act 1993 or permits to dispose under Environmental Permitting (England and Wales) Regulations 2010 as appropriate.

On nuclear Authorised sites DNSR has the responsibility for regulating the management of radioactive waste. It is therefore important for DNSR to have confidence that it knows where the Authorisee is storing such wastes and its condition. The purpose of this Condition is to place a duty on the Authorisee to ensure so far as reasonably practicable that radioactive material and radioactive waste is adequately controlled or contained so as to prevent leaks or escapes, and that in the event of any fault or accident which results in a leak or escape, the radioactive material or radioactive waste can be detected, recorded and reported to DNSR.

However neither RSA nor EPR10 Schedule 23 apply to premises occupied on behalf of the Crown for naval, military or air force purposes (Section 42 and Schedule 4 refer respectively). The Secretary of State for Defence has made a policy commitment to implement parallel administrative arrangements to those required by RSA93 or EPA10.

AC35 DECOMMISSIONING

(1) The Authorisee shall make and implement adequate arrangements for the decommissioning of any plant or process which may affect safety.

(2) The Authorisee shall make arrangements for the production and implementation of decommissioning programmes for each plant.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements or programmes as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements or programmes unless DNSR has approved such alteration or amendment.

(5) The aforesaid arrangements shall where appropriate divide the decommissioning into stages. Where DNSR so specifies the Authorisee shall not commence nor thereafter proceed from one stage to the next of the decommissioning without the consent of DNSR. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of the proposed decommissioning and shall where appropriate provide for the submission of this documentation to DNSR.

(6) The Authorisee shall, if so directed by DNSR where it appears to them to be in the interests of safety, commence decommissioning in accordance with the aforesaid arrangements and decommissioning programmes.

(7) The Authorisee shall, if so directed by DNSR, halt the decommissioning of a plant and the Authorisee shall not recommence such decommissioning without the consent of DNSR.

It is important that when a nuclear facility reaches the end of its operational life it is decommissioned in a safe and controlled manner and not left to pose a hazard for current and future generations. The purpose of this Condition is therefore to require the Authorisee to have adequate arrangements for the safe decommissioning of its facilities. It also gives DNSR the power to direct the Authorisee to commence decommissioning of any plant or facility to prevent it being left in a dangerous condition or to ensure decommissioning takes place in accordance with any national strategy. The Condition also gives DNSR the power to halt any decommissioning activity if DNSR has concerns about its safety.

AC36 ORGANISATIONAL CAPABILITY

(1) The Authorisee shall provide and maintain adequate financial and human resources to ensure the safe operation of the Authorised site.

(2) Without prejudice to the requirements of paragraph (1), the Authorisee shall make and implement adequate arrangements to control any change to its organisational structure or resources which may affect safety.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

(5) The aforesaid arrangements shall provide for the classification of changes to the organisational structure or resources according to their safety significance. The arrangements shall include a requirement for the provision of adequate documentation to justify the safety of any proposed change and shall where appropriate provide for the submission of such documentation to DNSR.

(6) The Authorisee shall if so directed by DNSR halt the change to its organisational structure or resources and the Authorisee shall not recommence such change without the consent of DNSR.

The purpose of this Condition is to ensure that the Authorisee maintains adequate financial and human resources to ensure the safety of Authorised activities, and implements adequate arrangements to control any change to its justified baseline organisational structure or resources which may affect safety.

Annex C to Chapter 2: MOD Further Authorisation Conditions

FAC1 Duty of Co-operation
FAC2 Operational Berths
FAC3 Radioactive Discharges
FAC4 Transport Packages

FAC1 DUTY OF CO-OPERATION

(1) The Authorisee shall make and implement adequate arrangements to co-operate with other Authorisees and to establish and maintain coherent management arrangements with such Authorisees for all activities which could affect safety.

(2) The Authorisee shall make and implement adequate arrangements to co-operate with Approving Authorities (incorporating, where appropriate, design authorities) for naval reactor plant and/or nuclear weapons.

(3) The Authorisee shall make and implement adequate arrangements to co-operate with organisations (both external and internal) for all activities which could affect safety.

(4) The Authorisee is to submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(5) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

This Condition results from the mobility of reactors and weapons in the Defence Nuclear Programme, and the separate responsibilities of Approving Authorities. The first purpose of the Condition is to maintain coherent arrangements between Authorisees to ensure the safe transfer of reactors or weapons from one to the other. The second purpose of the Condition is to maintain arrangements for co-operation between Authorisees and Approving Authorities to ensure that appropriate design control is exercised throughout reactor or weapon life and across life-cycle phases (in the nuclear weapon programme this complements the requirements of Approving and Design Authorities Conditions (ADAC)). Finally, the Condition ensures that arrangements are made for co-operation with independent organisations (e.g. contractors) and internally within the Authorisee's organisation where this is necessary to maintain safety.

FAC2 OPERATIONAL BERTHS

(1) The Authorisee shall make and implement adequate arrangements for use of operational berths by nuclear powered warships (NPW).

(2) The Authorisee shall ensure that no operational berth is used by a NPW without the consent of DNSR.

(3) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(4) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

This Condition results from the need for NPW to berth at operational berths outside Authorised sites including those in foreign countries. The purpose of this Condition is to ensure that regulatory consent is obtained for the use, and the scope of such use, of an operational berth by a NPW.

FAC3 RADIOACTIVE DISCHARGES

(1) The Authorisee shall, make and implement adequate arrangements to minimise and control the discharge of radioactive material to the environment.

(2) The Authorisee shall, if so directed by Defence Nuclear Safety Regulator (DNSR), not discharge radioactive material to the environment without the consent of DNSR.

(3) The Authorisee shall make and implement adequate arrangements to record information about any discharge of radioactive material to the environment.

(4) The Authorisee shall record such additional information as DNSR may specify.

(5) The Authorisee shall furnish to DNSR such information about any discharge as DNSR may specify.

(6) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(7) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

This Condition results from the need for environmental controls equivalent to those in legislation to apply to all parts of the Defence Nuclear Programme. The purpose of this Condition is to ensure that discharges of radioactive material are minimised and controlled and subject to regulatory consent. If a consent or its equivalent is granted by a statutory regulator, then DNSR will not need to issue a direction under (2) above.

FAC4 TRANSPORT PACKAGES

(1) The Authorisee or Duty Holder conducting transport activities outside an Authorised site shall make and implement adequate arrangements to ensure that radioactive material is carried in an appropriate package.

(2) Where DNSR so specifies, any such package shall be approved by DNSR (in its role as Defence Competent Authority (CA)).

(3) The Authorisee or Duty Holder supplying or using the package shall submit such reports and information as DNSR may specify.

(4) The Authorisee shall submit to DNSR for approval such part or parts of the aforesaid arrangements as DNSR may specify.

(5) The Authorisee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless DNSR has approved such alteration or amendment.

This Condition results from DNSR's role as Defence CA for transport packages which is consequent on exemptions in legislation. The purpose of this Condition is to ensure that CA approval is granted, where necessary, prior to use of a package to transport radioactive material in the Defence Nuclear Programme.

Annex D to Chapter 2: Special Nuclear Material Requirements (SNMR)

SNMR1	Organisational Capability
SNMR2	Training
SNMR3	Packaging
SNMR4	Documentation
SNMR5	Operating Procedures
SNMR6	Monitoring
SNMR7	Consignment
SNMR8	Radiological Protection
SNMR9	Non Compliance
SNMR10	Emergency Arrangements
SNMR11	Security

SNMR1 ORGANISATIONAL CAPABILITY

(1) The Duty Holder[21] shall provide and maintain the personnel and resources necessary to ensure the safe transport of SNM.

SSR-6[22] – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph number 306 and ADR[23] – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph number 1.7.3 also apply to this Condition. The related Authorisation Conditions are AC17 and AC36.

SNMR2 TRAINING

(1) The Duty Holder shall ensure that persons whose duties concern the transport[24] of SNM receive training appropriate to their responsibilities and duties.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 311-315 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph numbers 1.3, 1.7.2.5 and 8.2 also apply to this Condition. The related Authorisation Condition is AC10.

SNMR3 PACKAGING

(1) Carriers are to obtain assurance that the consignor has used the proper packaging for the specific contents of packages.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 421-433 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph number 4.1.9 also apply to this Condition. The related Authorisation Conditions and Further Authorisation Conditions are AC26 and FAC4.

SNMR4 DOCUMENTATION

(1) The Duty Holder shall ensure it has access to all the required documentation, including the relevant certificates of approval and any associated instructions for handling, loading, storage, use and maintenance of the packaging, and shall retain appropriate records for specified periods after completion of any transport.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 546-556, ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph numbers 5.4.1 and 5.4.1.2.5 and CDG Regulations – the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 and the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011 paragraph number 31(2) also apply to this Condition. The related Authorisation Condition is AC6.

[21] Any organisation, group or person who has responsibility for the transport of defence SNM.
[22] The 2012 Edition was the extant version at the time of issue of Issue 3.00 of this JSP.
[23] The 2013 Edition was the extant version at the time of issue of Issue 3.00 of this JSP.
[24] Transport comprises all operations and conditions associated with, and involved in, the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages (reference: SSR-6 paragraph 106).

SNMR5 OPERATING PROCEDURES

(1) The Duty Holder shall ensure that the appropriate procedures for the preparation, marking, labelling and use of the packages are established and followed, in accordance with the Regulations, the certificate of approval, the instruction manual and related documents.

(2) The Duty Holder shall ensure the proper determination and application of the correct transport index.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 502-503, 523-524 and 530-544 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph numbers 4.1.9, 5.2.1, 5.2.1.7, 5.3.1 and 5.1.5.3 also apply to this Condition. The related Authorisation Conditions are AC23 and AC24.

SNMR6 MONITORING

(1) The Duty Holder shall ensure that appropriate and properly calibrated instruments are provided, to monitor packages and conveyances for both radiation and contamination, and appropriate monitoring procedures are established and followed.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 508-514, 527-528, 566 and 573 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph numbers 4.1.9.1.2, 4.1.9.1.4 and 7.5.11 (CV33) also apply to this Condition. The related Authorisation Condition is AC28.

SNMR7 CONSIGNMENT

(1) The Duty Holder shall ensure that established procedures are followed for:

(a) The correct preparation and control of all relevant shipping documents;
(b) The correct placarding of the carrier's vehicles;
(c) Providing all required documentation to carriers; and
(d) Providing notification to the Competent Authorities as required.

(2) The Duty Holder shall ensure that during transport, carriers perform any required actions relating to placarding, stowage and segregation of packages, etc., particularly any administrative controls relating to exclusive use shipments, or supplementary operational controls as specified in the certificate of approval.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 545-560 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph numbers 5.1.5, 5.2.1, 5.2.1.7, 5.3, 5.4, 5.4.1.2.5, 5.4.3 and 5.4.1.2.5.2 also apply to this Condition. The related Authorisation Condition is AC5.

SNMR8 RADIOLOGICAL PROTECTION

(1) The Duty Holder shall establish an appropriate Radiation Protection Programme for its activities concerning the transport of radioactive material, and ensure that the programme is maintained, reviewed and complied with.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 301-303 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph number 1.7.2 also apply to this Condition. The related Authorisation Condition is AC18.

SNMR9 NON COMPLIANCE

(1) The Duty Holder shall:

(a) Develop and implement procedures to respond to cases of non-compliance.
(b) Ensure that appropriate investigative and corrective action is carried out;
(c) Ensure that the necessary reporting and communicative action is carried out.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph number 309 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph number 1.7.6 also apply to this Condition. The related Authorisation Condition is AC7.

SNMR10 EMERGENCY ARRANGEMENTS

(1) The Duty Holder shall:

(a) Develop and maintain appropriate emergency response arrangements;
(b) Exercise arrangements periodically.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph numbers 304-305 and CDG Regulations – the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 and the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011, paragraph number 24 and Schedule 2 also apply to this Condition. The related Authorisation Condition is AC11.

SNMR11 SECURITY

(1) The Duty Holder having custody of SNM shall make and implement adequate arrangements to prevent unauthorised persons from gaining access to it.

SSR-6 – International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material paragraph number 109 and ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road paragraph number 1.10.1.1 also apply to this Condition. The related Authorisation Condition is AC2.

Chapter 3 Regulatory Processes and Activities

Introduction

1. This Chapter outlines the regulatory processes and activities which DNSR will use principally in interacting with organisations being regulated. The detailed processes that govern and guide the internal business of DNSR are not included in this JSP. Guidance developed by DNSR is provided in Part 2 of this JSP.

> Note: For convenience throughout the remainder of this chapter Authorisee, Approving and Design Authority (ADA) or Duty Holder has, where appropriate, been shortened to Authorisee; reference to Authorisation Certificate includes Accreditation Certificate[25].

Defence Safety and Environment Management Organisation

Departmental Arrangements

2. Departmental arrangements for the management of safety and environmental protection in MOD and the defence community, including the necessary policy-making and regulatory processes are given in JSP 815.

Ministry of Defence Regulation

3. Where defence activities are not subject to statutory regulation, it is the Department's normal practice to empower a Defence Regulator to deliver an appropriate regulatory regime. The Director of the Defence Safety and Environment Authority (D DSEA) has a delegation from the Permanent Under Secretary to appoint regulators for all high hazard functions except aviation[26]. D DSEA is the line manager for the Head of DNSR (DNSR-Hd) and provides a Letter of Delegation giving authority to regulate; key aspects of this delegation are at Annex A. D DSEA chairs the Defence Nuclear Regulation Stakeholder Committee (DNRSC) which provides a consultative and influencing forum by which stakeholders can offer views on emerging legislation, the MOD regulatory regime, policies, requirements, guidance and processes, and can consider high-level safety performance matters. Terms of reference for the DNRSC are available from DNSR.

Defence Nuclear Safety Regulator

Organisation and Authority

4. DNSR's organisation is accessible via its intranet website.

5. DNSR-Hd heads the organisation. He is accountable to the Chairman, DNRSC and delegates regulatory authority to:

a. DNSR-NPR who regulates nuclear and radiological safety in the Naval Nuclear Propulsion Programme (NNPP);

b. DNSR-DepHd/NWR who regulates nuclear and radiological safety in the Nuclear Weapon Programme (NWP).

[25] Applicable only to NWP
[26] Aviation regulation is delivered by the Military Aviation Authority

c. DNSR Principal Inspectors and Inspectors who regulate designated areas of the DNP under direction from DNSR-Hd and DNSR/NPR or DNSR-DepHd/NWR as appropriate; they are the primary point of contact between DNSR and an Authorisee.

6. The delegation routinely includes the authority to:

a. approve/agree or otherwise the use of management arrangements;

b. set and lift regulatory hold points;

c. permission or otherwise specified activities;

d. direct the postponement or cessation of a specified activity;

e. consent to or otherwise specified discharge limits;

f. agree or otherwise the appointment of specified persons;

g. agree or otherwise specified NNPP clearances;

7. Within DNSR certain 'generic' responsibilities (e.g. as focal point on specific issues) are allocated to team members who may support Inspectors as necessary.

Support from Consultants

8. To support its activities, DNSR employs consultants under contract (from AMEC, Regulatory Support Business Area (RSD)) and, for radiological protection and emergency response advice, from the Defence Science and Technology Laboratory (DSTL). The Nuclear Department of the Defence College of Management and Technology (part of the Defence Academy) and the Institute of Naval Medicine also provide support and advice. Regulatory authority is not delegated to these bodies[27].

Interaction with Other Regulators (see also Chapter 1 paragraphs 36-46)

9. The relationships that the DNSR has with external regulators are described in various agreements and understandings that have been established; these are reviewed periodically outside the publication process for this JSP. Departmental relationships with the Health and Safety Executive (HSE) are set out in a General Agreement, Annex B of which covers nuclear issues. At the working level a Letter of Understanding has been agreed between DNSR and ONR. DNSR maintains arrangements with ONR's Radioactive Materials Transport Team in respect of the transport of radioactive material. A Memorandum of Understanding (MoU) between the MOD and the Environment Agency (EA) exists along with an associated nuclear annex. A MoU between the MOD and the Scottish Environment Protection Agency (SEPA) was signed in September 2012.

10. Within DSEA, DNSR, the Defence Ordnance Munitions and Explosives Safety Regulator and the Defence Maritime Regulator co-operate to secure effective regulation of high consequence activities in the DNP. DNSR-NWR has agreed a Letter of Understanding with the Head of Defence Ordnance Munitions and Explosives Safety Regulator (DOSR-Hd) (Chief Inspector of Explosives (CIE) (MOD)) as nuclear weapons also contain explosives.

[27] IAEA Standard GSG-4 (Use of External Experts by the Regulatory Body) notes that the regulatory body should ensure that it retains its responsibility for making all decisions on regulatory and safety issues.

Summary of Regulatory Activities

Regulatory Policy

11. As identified in JSP 815 DNSR sets, owns and maintains regulatory policy for, and assurance of, nuclear and radiological safety and environmental protection in the Defence Nuclear Programme. Part 1, (particularly Chapter 2) of this JSP sets out the requirements and Part 2 provides related guidance.

Defence Nuclear Regulatory Forum (DNRF)

12. Developments in regulatory policy are subject to a consultation process, appropriate to their significance, with representatives of Authorisees and other stakeholders. Consultation is routinely conducted by correspondence, but may include discussion at the Defence Nuclear Regulatory Forum (DNRF) and, if issues are novel or contentious, at the DNRSC. The DNRF, chaired by DNSR-Hd, enables the sharing of good practice and helps indicate to DNSR where its regulatory practices could be improved. Authorisees and stakeholders can also provide their views on new or amended regulatory requirements, processes or guidance. Terms of reference are available through DNSR's intranet website.

DNSR Regulatory Policy Committee (RPC)

13. The DNSR Regulatory Policy Committee (RPC), chaired by DNSR-NWR, provides advice to DNSR staff on the programme to review and develop regulatory policy and on drafts that will be issued for formal consultation. Membership includes independents and terms of reference are available from DNSR.

Regulation

14. DNSR regulates through the following processes:

a. the formal declaration of the scope of an Authorisee's activities through an Authorisation Certificate (see paragraph 16 below);

b. the generation of Intervention Strategies (IS) and Intervention Plans (IP) (see paragraph 18 below);

c. inspection of activities and arrangements (e.g. Authorisation Condition (AC) Compliance Statements and other documentation provided by an Authorisee) (see paragraphs 21-29 below);

d. assessment of safety justifications or submissions which may enable activities to be permissioned or approvals to be agreed (see paragraphs 30-36 below);

e. assessment of emergency response exercises to examine the effectiveness of emergency arrangements in a dynamic environment (see paragraphs 38-40 below);

f. response to events (including incidents and accidents) and the investigation of them (see paragraphs 41-42 below).

15. DNSR provides information on its activities, principally by written reports at various levels, but also in briefings of differing degrees of formality. Each year, DNSR-Hd submits a report for PUS through the D DSEA summarising high level conclusions on safety performance in the DNP. DNSR Principal Inspectors produce quarterly reports which are available from DNSR and, where appropriate, are provided to Local Liaison Committees (see paragraph 60 below).

Authorisation

16. DNSR formally recognises the conduct of most activities in the DNP with nuclear or radiological safety implications through the provision of an Authorisation Certificate specifying the scope of the activities and the location(s) in which they are conducted. The Conditions attached to the Certificate are the AC and Further Authorisation Conditions (FAC) stated in Chapter 2.

17. The transport of DNP RAM, other than NW, is regulated in a similar manner to the regulation of civil RAM transport, and is therefore outside the 'DNSR authorisation system'. DNSR regulatory processes and activities in relation to 'non-NW' RAM transport are generally as described in this Chapter. The requirements against which RAM transport is regulated are those set out in Chapter 2.

Intervention Strategies and Plans

18. Intervention Strategies (IS) and Intervention Plans (IP) determine the way that DNSR interacts with Authorisees. A programme (e.g. NNPP) level strategy is produced taking account of developments, technical, managerial and contractual in the NNPP. Authorisee specific IS and IP are produced by DNSR to guide regulatory staff in the business of gaining assurance, influencing behaviours and permissioning activities, and to inform Authorisees about what is proposed. IS and IP are tuned to the particular circumstances of an Authorisee taking account of issues such as maturity of arrangements (compliance), the Authorisee's programme of activities, perceived safety risk and regulatory resource. Where DNSR works jointly with another regulator (especially with ONR), integrated, sometimes joint, IS and IP are normally produced.

19. An IS states regulatory priorities over a 3-4 year period, stating the major outcomes expected and requires the production of IP. The following are considered in producing an IS and reviewing it (at least annually):

a. DNSR's business plan and Issues from the previous DNSR Annual Report;

b. the opportunities for different styles of intervention;

c. the outcomes from previous interventions;

d. programme information published by the Authorisee and its superior organisation;

e. regulatory analysis of the Authorisee's activities and the risks they present;

f. regulatory view of the state of compliance with AC;

g. any Safety Improvement Notice (SIN) or Finding requiring long-term action;

h. a strategic view of the regulatory resource to be applied to the Authorisee.

20. An IP scopes the inspection and assessment programmes over the future year, noting the permissions expected to be requested, and explains how the relevant IS will be achieved. The following are considered in producing an IP and reviewing it (approximately quarterly):

a. the relevant IS;

b. the outcomes from previous interventions (in year);

c. short-term changes in the Authorisee's programme;

d. any SIN or significant Finding requiring action;

e. short-term information on the regulatory resource to be applied.

An IP scopes the inspection and assessment programmes over the future year, noting the permissions expected to be requested, and explains how the relevant IS will be achieved.

Inspections

Routine Inspections

21. A programme of routine inspections is agreed with each Authorisee to meet objectives in the relevant IP. The programme is reviewed approximately quarterly altering in the light of emerging issues or events.

Permissioning Inspections

22. When regulatory permission is sought to conduct a specified activity, the assessment of safety justifications may be complemented by inspections to examine the arrangements claimed.

Themed Inspections

23. Themed inspections may be conducted which address a specific topic (e.g. AC) in a consolidated manner, potentially across more than one Authorisee.

Reactive Inspections

24. When necessary, a reactive inspection may be conducted in response to an event which appears to require specific regulatory action and/or an investigation. While notice is normally given, in exceptional circumstances an immediate, unplanned inspection may be carried out (see paragraph 42 below.)

Large Scale Inspections

25. A large scale inspection may be conducted when, for example, it appears necessary to undertake a holistic or high-level review of an Authorisee's management arrangements in a way which routine inspections do not.

Authorisation Inspections

26. A potential Authorisee or an Authorisee is subject to one or more routine inspections and/or a large scale inspection to establish or re-establish the basis for Authorisation. A summary of DNSR's view of an Authorisee's compliance with AC is prepared in support of high-level meetings between DNSR-Hd and the Authorisee (approximately annually).

Inspection Process

27. DNSR Inspectors will work together with other regulators where appropriate to co-ordinate inspection programmes in the interests of efficiency. Before an inspection, the DNSR Inspector will consult with the Authorisee to be inspected to agree the detail of the inspection arrangements. In the interests of efficiency and practicality, occasions may arise when DNSR

Inspectors may wish to observe or participate in an Authorisee's internal inspections. On request an Authorisee is to make the outcome of relevant internal inspections available to DNSR. The inspection team may be led by either senior DNSR personnel or other regulatory bodies and may also be performed jointly with those bodies.

28. Inspections are conducted against the relevant documentation covering the scope of the arrangements and activities being inspected (e.g. statutory requirements, appropriate elements of this JSP, Authorisation Condition Compliance Statements, Safety Assessment Principles (SAP), safety justifications). On request, an Authorisee is to make the outcome of relevant internal inspections available to DNSR Inspectors.

29. At the conclusion of an inspection a closing meeting is held with representatives of the Authorisee so that key Findings can be presented. Subsequently, a written report is provided which expands on the material presented at the meeting and proposes the Findings and Observations from the inspection (see paragraphs 51-52 below).

Permissioning

30. In common with statutory regulators, DNSR operates a permissioning regime which requires Authorisees to seek regulatory permission before conducting specified activities; the elements of this regime (and the language of consents, approvals and agreements[28]) are expounded in AC, FAC, ADAC or SNMRs where appropriate. DNSR also requires Approving Authorities (together with Design Authorities) to obtain regulatory permission prior to granting Authority to Operate[29] by Authorisees. Permissioning is granted subject to the assessment of safety justifications or submissions together, where necessary, with the outcome of inspections of arrangements and/or activities.

31. Safety management arrangements require categorisation schemes which govern due process within an Authorisee's organisation, potentially including the regulator for higher significance activities or approvals. DNSR may also "call in" the justification or submission for lower significance activities or approvals and is notified about the business of an Authorisee's Nuclear Safety Committee.

32. Relevant AC, FAC and ADAC require that justifications and approvals are prepared in stages; for example a justification may be progressively prepared as the design of a new facility is developed. Authorisees and Approving Authorities are encouraged to engage early in any justification or approval campaign and to propose hold-points from which DNSR can select those significant enough to warrant regulatory intervention and agree the associated hold point release criteria. If necessary DNSR will introduce specific regulatory hold points. A programme is then developed which allows sufficient time for DNSR to undertake assessments and provide the necessary permissions or agreements to meet declared milestones. Likewise, subsequent changes to people, plant or processes may also require DNSR permissioning, depending on the safety categorisation and classification.

33. For justifications and approvals prepared in stages, DNSR permissioning can either be via the direct powers in the relevant Condition, or via secondary powers built into the Authorisee or Approving Authority's arrangements:

> **Direct:** DNSR may specify that the Authorisee/Approving Authority shall not commence nor thereafter proceed from one stage to the next without DNSR consent. In this case, DNSR would use the direct powers of specification and consent to permission the activities.

[28] See Glossary for definitions.
[29] Some Authorisees use the term 'Approval for Use' rather than 'Authority to Operate'.

Secondary: The Authorisee or Approving Authority's arrangements may provide secondary powers to DNSR by defining hold points beyond which the Authorisee/Approving Authority is not to proceed without DNSR permission. DNSR permission would be granted via agreement for the Authorisee/Approving Authority to proceed in accordance with its own arrangements. In this case, DNSR agreement is a secondary power derived from the Authorisee/Approving Authority's arrangements, rather than a direct power from the Condition.

34. The depth and scope of scrutiny during regulatory assessment is at DNSR's discretion taking into account issues such as:

a. the probability and potential consequences of a nuclear emergency including malicious acts;

b. the provenance of the design and safety justification;

c. the robustness of the Authorisee's arrangements.

The assessment seeks:

d. evidence of compliance with requirements in this JSP;

e. to establish that risks to workforce and public are ALARP;

f. evidence of the use of appropriate codes, standards and methods;

g. assurance that the Authorisee's own assessment has been adequate.

In conducting the assessment, DNSR Inspectors (and assessors) are guided by ONR's SAP, DNSR and ONR relevant Technical Assessment Guides (TAG) and other appropriate national and international guidance (e.g. from the International Atomic Energy Agency (IAEA)).

35. Specific amplifications of these processes are in place for the Regulation of Operational Berths and Agreement to the Criticality of Naval Reactor Plant. These are outlined in Annexes B & C.

36. DNSR's permission is indicated by letter or certificate as appropriate; conditions or Findings for subsequent action may be associated (see paragraph 52 below). DNSR may revoke, revise, or withdraw any permission if the circumstances so demand it.

Radioactive Material (RAM) Transport

37. DNSR is the Competent Authority for the transport of radioactive material within the DNP. Applications for package (and where appropriate shipment) approval are made to the Competent Authority. Potential Applicants should read the 'DNSR Guide to an Application for UK Defence Nuclear Programme Competent Authority Approval of a Transport Package for Radioactive Material'. DNSR Inspectors are guided by a DNSR TAG, Special Nuclear Material Requirements (SNMRs), ONR TAGs and other appropriate national and international guidance.

Emergency Response Demonstration

38. The response to an emergency is a dynamic activity; assurance that an Authorisee's arrangements are adequate is most satisfactorily gained when the response is demonstrated under simulated conditions in exercises. Not all elements of a specific emergency response (e.g. an Authorisee's on-site plan) need to be demonstrated in a single exercise, but DNSR expects an Authorisee to propose a programme of exercises over a period which will address all

elements. In addition to routine inspection of management arrangements, DNSR assesses emergency response demonstration exercises in the Defence Nuclear Programme working jointly, when appropriate, with ONR which has statutory regulatory responsibilities for emergency response under Radiation Emergency Preparedness and Public Information Regulations (REPPIR). JSP 471 states Departmental policy for defence nuclear emergency response; DNSR works in conformance with that policy.

39. The scope and scenario of an adequate demonstration exercise is proposed adequately in advance by an Authorisee and agreed by the DNSR Inspector. The Authorisee plans the exercise, giving the DNSR Inspector visibility of the process, and provides a briefing for the assessors just prior to the exercise. The Authorisee may also conduct self-assessment of the demonstration. The DNSR assessment is conducted by a team who will observe each key area of the response. Observations are made systematically on as objective a basis as possible against common guidelines; they cover the way the exercise has been planned and is controlled as well as the response itself. The assessment focuses on the outcomes that are required, checking that the response plan describes how they should be achieved, but giving credit for achieving the right outcomes by means other than those identified. The lead DNSR assessor provides a preliminary verbal report shortly after the exercise has concluded summarising the key outcomes. A letter of assessment follows in which draft Findings are proposed for subsequent agreement and tracking (see paragraph 52 below).

40. The assessment is of an Authorisee's response and does not extend to other statutory authorities that may form part of overall response. In view of their major role, however, it is recognised that any shortcomings in the response by statutory authorities may impact on the achievement of particular outcomes. Where such difficulties arise DNSR seeks to establish that all necessary information and advice had been provided to the statutory authorities in advance to enable them to develop their plans effectively, and that appropriate support was provided to the response during the exercise.

Events (Incidents & Emergencies)

Reporting an Event (Incident)

41. AC7 requires an Authorisee to have arrangements for the notification of events[30] (incidents); they cover notification within its own organisation, to other Authorisees, to an Approving Authority and to relevant regulators. The primary reporting point should be the DNSR Inspector; detailed arrangements are promulgated in a protocol document agreed by the Authorisee and DNSR-Hd. DNSR may specify the nature of events which are to be reported to DNSR if they occur. If certain criteria are met, it is a Departmental requirement that an Authorisee notify MOD HQ for defence ministers and that DNSR also provides information about the event (incident).

Early Action

42. DNSR considers the information provided in the notification, against the background of what is already known about the Authorisee's arrangements and activities and in conjunction with other relevant regulators, seeking to understand:

a. whether actual harm (and its degree) has occurred or what the potential for such harm was;

b. whether there is likely to have been a breach of statutory requirements;

[30] A plethora of terms may be used in this context (occurrence, abnormal event, event, incident, accident, emergency etc.); a distinction is made here only between incidents and accidents – the latter require activation of emergency response plans.

c. whether there has been a release of radioactive material;

d. whether (and to what degree) the requirements of the safety justification have been breached;

e. the wider (including public) interest in the event;

f. the potential implications for other activities in the Defence Nuclear Programme.

Based on that understanding, DNSR may take early action in accordance with arrangements described at paragraph 50 below, may initiate a reactive inspection and/or may initiate a regulatory investigation.

Investigation

43. AC7 also requires an Authorisee to investigate events (incidents and accidents) seeking assistance from others (e.g. an Approving Authority) as required. DNSR monitors the investigation conducted by an Authorisee and may undertake a regulatory investigation in conjunction with other regulators (as appropriate) and including a reactive inspection as necessary. Investigations establish the cause of the event and recommend any remedial activity. DNSR may take action in accordance with the arrangements at paragraph 50 below and may specify actions to be taken by other Authorisees and/or Approving Authorities as necessary. DNSR may issue reports as indicated elsewhere in this Chapter and/or may prepare a special report on the event, the actions taken, investigations and remedial activities as necessary.

DNSR Response to a Defence Nuclear Emergency

44. Defence Nuclear Emergency Response Arrangements are invoked if an Authorisee has to activate either its operator's or off-site plans. In the response to a defence nuclear emergency, DNSR adapts working practices to the circumstances but does not cease to regulate. In due course, as determined by DNSR, routine regulatory processes are reinstated and preparations made for the investigation (see paragraph 43 above).

45. Where appropriate DNSR staff attend the Technical Guidance Group in order to oversee the technical assessment process, in particular in order to make an independent regulatory assessment of the future course of the emergency. This will be forwarded to the other DNSR regulators described below for input on-site and at both the local and national strategic level of the response.

46. The relevant DNSR Principal Inspector (and other DNSR staff to provide sustainability) attends the emergency location and associated command and control centres in order to:

a. provide regulatory input (including permissioning if appropriate);

b. provide a direct feed of information to the Head of Nuclear Safety Cell;

c. liaise with other regulators present (e.g. ONR);

d. record information on developments and decisions;

e. glean information in support of the subsequent investigation.

47. Where appropriate DNSR staff attend the multi-agency off-site response centre specifically in order to provide an independent regulatory assessment of the future course of the emergency.

48. MOD establishes HQ Nuclear Emergency Response Organisation (NERO) in the Defence Crisis Management Centre in Main Building to provide a link between the Military/MOD Coordinating Authority and MOD HQ (including ministers). HQ NERO also provides the Lead Government Department co-ordination of UK government response. DNSR-Hd becomes Head of the Nuclear Safety Cell (part of HQ NERO), and senior DNSR personnel ensure the sustainability of this cell. DNSR interprets information on the defence nuclear asset involved, assesses the significance of the emergency against the International Nuclear Events Scale (INES) and reviews proposals for stabilisation and recovery (if appropriate). DNSR considers the need for regulatory action in accordance with the arrangements described below.

Enforcement

49. The purpose of enforcement is:

(1) to ensure Duty Holders deal immediately with serious risks;
(2) to promote and achieve sustained compliance with this JSP;
(3) to ensure that Duty Holders who are outside their agreed arrangements are returned to compliance with the requirements specified in Chapter 2.

50. As a result of its regulatory activities, DNSR may identify an issue affecting nuclear or radiological safety or environmental protection. DNSR's process for the management of issues is graduated and escalatory, communicating clearly to an Authorisee the status, importance and urgency of an issue which DNSR considers to have an impact on safety and facilitating its efficient resolution, as agreed with the Authorisee, at the lowest appropriate level of priority. An issue on which a response is required is raised as a Finding. A Finding which may have a significant or immediate impact on safety, either when it is raised or later, if it has not been resolved in a timely manner, may additionally be made the subject of a Safety Improvement Notice (SIN) or an Immediate Safety Requirement (ISR).

Observation

51. DNSR may identify an issue which is considered to be worthy of an Authorisee's attention, but which is not a Finding, and may raise an Observation. An Observation may be similar in format and communicated in a similar way to a Finding. The Authorisee is not required to formally respond to an Observation. An Observation is a statement of fact, supported by objective evidence, to illustrate good or bad practice in the management arrangements.

Finding

52. Issues which affect safety and on which a formal response is required will be raised as a Finding. A Finding may be proposed:

a. during an inspection and/or in the subsequent report;

b. in an assessment letter:
   (1) giving permission to an activity or;
   (2) agreement to a safety submission or;
   (3) following a demonstration exercise;

c. in response to an event;

d. as a result of an investigation;

e. in other circumstances as necessary.

The DNSR Inspector determines the final wording of the Finding, the proposed response and timescale after consultation with the Authorisee and records these in the DNSR Findings database.

53. Progress in responding to a Finding is presented to the DNSR Inspector during routine business. Evidence of a satisfactory conclusion may be sought in subsequent inspections, assessments or demonstration exercises. Close-out of a Finding is recorded in the DNSR Findings database.

Safety Improvement Notice (SIN)

54. If a Finding has a significant impact on safety or an Authorisee's response to a Finding is inadequate (e.g. where one or more AC are breached and circumstances make it likely that the contravention will continue or be repeated), giving rise to serious concern, a SIN is issued. A SIN states DNSR's reason for imposing it and explains why action is required by a stated time or to a programme milestone. DNSR informs, and if appropriate consults with, other relevant regulators when a SIN is issued. DNSR agrees[31] with the Authorisee the period allowed for resolution of a SIN, taking into account relevant factors such as the impact on safety. A SIN is promulgated by approval of DNSR-Hd, DNSR-DepHd/NPR or DNSR-NWR and copied to the Chairman, DNRSC.

DNSR Direction and Specification

55. DNSR has the power to direct an Authorisee to take a particular action. A direction is used for matters of major or immediate importance. DNSR also has the power to issue a specification, which requires the Authorisee to implement the specified arrangements. Regulatory control over activities deemed to have a significant nuclear safety implication is effected by specifying regulatory hold-points.

Immediate Safety Requirement (ISR)

56. If an outstanding or new Finding identifies an immediate impact on safety that is unacceptable and no action appears imminent from the Authorisee, an ISR is issued under the terms of AC31 (Shutdown of Specified Operations). An ISR requires immediate action on the part of the Authorisee to mitigate the impact to an acceptable level and to justify this action to DNSR (and thus it differs from a SIN). The Authorisee's response to an ISR takes priority and may require an activity to cease or be postponed. Where practicable, an ISR is promulgated by approval of DNSR-Hd, DNSR-DepHd/NPR or DNSR-NWR (but DNSR Inspectors also have this authority) and is notified to the Chairman, DNRSC. An activity that ceases or is postponed in response to an ISR cannot be restarted without DNSR agreement that mitigating action has been satisfactorily taken.

Arbitration and Escalation

57. If, in exceptional circumstances, the wording of a Finding or the response and timescale cannot be agreed or if it is not being resolved in a timely or satisfactory manner, then arbitration should be sought through management of both regulator and Authorisee, escalating as appropriate.

[31] Final decision on timescales is DNSR's.

DNSR Reports

Visit Records

58. DNSR Inspectors keep a record of regulatory visits or interactions; records of meetings attended with an Authorisee may constitute such records. As a minimum these records include adequate information to support the production of the Quarterly Reports and provide an auditable trail of decision making.

Quarterly Reports

59. DNSR Inspectors produce quarterly reports to a set format covering interactions with the Authorisee over the previous period. This report is checked for consistency with relevant equivalent reports issued by other regulators. Where appropriate, the Authorisee is made aware of the content of the report prior to publication.

60. If the Authorisee provides a forum for representation of local community interests through a Local Liaison Committee (LLC) (e.g. at major sites), the DNSR quarterly report is provided for the Authorisee to forward to members where appropriate.

DNSR Annual Report

61. DNSR publishes a formal annual report which provides a statement of high-level conclusions about nuclear and radiological safety; environmental protection in the DNP is included. DNSR raises or carries forward issues[32], particularly of a generic nature, to which Authorisees or their superior organisations are expected to respond. The issues result from the regulatory processes and other information provided to DNSR; any SIN or ISR promulgated during the year is noted. The report also includes a summary of DNSR's regulatory activities during the year. The report provided for PUS is used as the basis for DNSR's regulatory commentary on assurance reports provided by Duty Holders and collated into the Department's annual report. The DNSR report is also provided to the Defence Nuclear Executive Board and the Defence Nuclear Safety Committee.

[32] NB. These are not the same as regulatory issues described in paragraph 44 et seq.

Annex A to Chapter 3: Specific Responsibilities from DNSR's Letter of Delegation

1. Within the delegated area of responsibility, each DSEA regulator is to:

a. understand and, where appropriate, influence safety and environmental protection legislation and statutory regulatory regimes where relevant to DSEA's remit; examine emerging proposals relevant to Defence, assess their impact and consider the need for and where necessary apply for Defence exemptions;

b. understand and, where appropriate, influence Departmental policy which may affect safety and environmental protection, including the SofS for Defence's Policy Statement;

c. develop and promulgate safety and environmental protection regulatory regimes for Defence activities on a domain basis; where practicable, each regime should maximise coherence with its statutory equivalent (or near-equivalent) and with other MOD regulatory regimes (including those of the MAA);

d. maintain and implement processes, consistent with the regulatory regime, to inspect and audit Defence activities for compliance with regulatory policies, requirements and standards;

e. maintain and implement processes, consistent with the regulatory regime, to certify, license, authorise, approve, agree and/or permission Defence activities; where appropriate, MOD regulatory permission is to be necessary prior to conducting a Defence activity. If such permission is withheld or withdrawn, the activity is to cease where this is provided for in the regulatory regime;

f. maintain and implement processes, consistent with the regulatory regime, to enforce MOD regulatory policies, requirements and standards; the imposition of significant sanctions is be reported to Director DSEA, PUS and, where appropriate, SofS for Defence;

g. maintain and implement processes, consistent with the regulatory regime, to investigate any incident or emergency occurring during the conduct of Defence activities;

h. develop and promulgate guidance to those conducting Defence activities to facilitate their compliance with legislation, statutory and MOD regulatory policies, requirements and standards;

i. promote and foster appropriate culture and continuous improvement in safety and environmental protection by those conducting Defence activities;

j. contribute to the production of an annual DSEA report to PUS which includes: a summary of safety and environmental protection performance within DSEA's remit (scrutinising Duty Holders' assurance reports as necessary), the identification of issues (with associated regulatory risk) and an account of the health of MOD regulation; based on this, PUS will report to the Defence Board, the Defence Audit Committee and SofS for Defence;

k. notwithstanding the annual report, alert Director DSEA if any serious issue threatens safety or environmental protection within DSEA's remit;

l. promote and foster peer relationships with relevant statutory regulators and Government departments; establish liaison arrangements; where appropriate, develop and maintain joint regulatory regimes to secure complete regulation of Defence activities;

m. promote and foster peer relationships with relevant foreign regulatory authorities or Government agencies.

Annex B to Chapter 3: Regulatory Processes for Operational Berths

1. Where the berthing of a nuclear powered warship (NPW) takes place under the control of a site Authorisee, the regulatory processes applied are consistent with others for that site. Where NPW are berthed in locations outside Authorised sites, these locations are termed Operational Berths and the following processes apply.

2. Operational Berths form de facto temporary nuclear sites. In permissioning the use of an Operational Berth, the Defence Nuclear Safety Regulator (DNSR) takes into account the wide variety of geographic locations, and hence the diverse legal frameworks. The table articulates the regulatory responsibilities for the various issues which are reviewed in considering the use of berths in different locations.

Location	Management Arrangements	Safety Submission	REPPIR (or equivalent)	Emergency Arrangements
UK	DNSR	DNSR	ONR	ONR & DNSR
Gibraltar	DNSR	DNSR	Government of Gibraltar	Government of Gibraltar & DNSR
Other British Overseas Territories	DNSR	DNSR	DNSR	DNSR
Foreign	DNSR	DNSR	Not applicable	DNSR

Applicable Regulatory Processes

3. Inspection. Inspections, led by DNSR, are conducted as necessary, both of the management arrangements and the physical arrangements at berths as appropriate.

4. Permissioning. Assessment of safety submissions are normally led by DNSR. Within the UK, DNSR supports the Office for Nuclear Regulation's (ONR's) Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR) determination in a similar manner to that for Authorised sites. DNSR seeks assurance that all identified regulators are content before giving permission to use a berth.

5. Emergency Response Demonstration. Within the UK ONR leads on the demonstration of off-site arrangements and DNSR leads on operator's arrangements. In Gibraltar, the Government of Gibraltar (GoG) assesses the off-site arrangements and DNSR the operator's arrangements. For other British Overseas Territories, DNSR assesses all aspects of the arrangements. Any arrangements put in place by other nations remain entirely their own responsibility and are neither required nor considered by DNSR.

Assurance to Other Regulators

6. UK. DNSR shares information with ONR as described in the Letter of Understanding between ONR and DNSR.

7. Gibraltar. DNSR provides formal assurance to the GoG but does not pass over classified material. GoG REPPIR specifically takes credit for assessments conducted by the UK HSE.

8. Other Nations. DNSR normally answers approaches from other national authorities by reference to the Standard Statement (See Part 2).

Annex C to Chapter 3: Regulatory Agreement to Criticality of Naval Reactor Plant

1. For a Naval Reactor Plant (NRP) to be operated[33], formal regulatory agreement is necessary. Normally this will be in the form of Defence Nuclear Safety Regulator (DNSR) agreement to the issue of an Authorisation to Operate (AtO) by the Naval Reactor Plant Authorisee (NRPA); the agreement will outline any conditions and limits, including limits on duration.

2. For initial criticality of a new core for Active Commissioning by Power Range Testing (PRT) there will normally be discrete elements of regulatory process:

a. DNSR (normally Principal Inspector Operational Reactors) will agree to the issue of the AtO (PRT) by the NRPA when satisfied that the NRP and its supporting documentation are in an adequate state following inactive commissioning;

b. DNSR (normally Principal Inspector for the site), in conjunction with the Office for Nuclear Regulation (ONR) where appropriate, will permission the conduct of PRT on an Authorised site when satisfied that the Authorisee's relevant arrangements and facilities are adequate.

3. On satisfactory completion and adequate assessment of PRT and when satisfied that continued operation of the NRP can be supported, DNSR will agree to the issue of the AtO(Fleet) by NRPA.

4. As long as there is a valid AtO, DNSR will not normally need to agree an individual NRP start up. There are, however, exceptions:

a. where the possibility arises that the NRP may need to operate outside the conditions and limits of the AtO (e.g. due to a defect or emergent issue): a suitably robust ALARP justification (commensurate with the extent to which the conditions and limits may be breached) would need to be provided by NRPA before DNSR permission could be given. The justification will need to address the particular issues affecting the NRP, present optioneering to identify mitigating actions, and identify the benefit that will accrue from continued operation. It may be necessary to review the state of the NRP against the requirements of Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR) where there is doubt over compliance with the submissions to ONR or a material change is indicated

b. where a deviation from the permissioned activity is proposed; this is particularly the case if trials are to be planned that have a material implication for the safety of the workforce or the public or protection of the environment;

c. where a formal regulatory hold point has been placed.

5. Briefing of Ministers and senior officials will be conducted as appropriate to the plant in question and the situation prevailing at the time, noting the routine briefings by NRPA in support of PRT.

[33] Meaning, in this context, achieving criticality or a self-sustaining nuclear reaction.

GLOSSARY

This section provides a common JSP 518/538 glossary of the meaning of terms as used specifically in regulatory documents.

Accident. Any unintended event, including operator errors, equipment failures or other mishaps, the consequences or potential consequences of which are not negligible from the point of view of protection or safety[34].

Accreditation. A regulatory mechanism through which the Head of the Defence Nuclear Safety Regulator sets the Conditions permitting an Accreditee to establish his own safety arrangements where adequacy must be demonstrable to the satisfaction of the Defence Nuclear Safety Regulator (DNSR).

Accreditation Certificate. A certificate provided by DNSR-Hd defining the scope of activities Accredited.

Accreditee The post-holder Authorised by DNSR-Hd to operate in compliance with the Approving and Design Authorities Conditions.

Agreement.
Explanation: An Agreement allows an Authorisee/Accreditee to proceed in accordance with its own arrangements.
Reason for use: Where the need to obtain DNSR's Agreement is written into the Authorisee/Accreditee's arrangements, it prevents an Authorisee/Accreditee from proceeding unless the course of action has been agreed. Agreement is a non-prescriptive means to foster ownership of safety management in the Authorisee/Accreditee, and it is more economic than it would be for DNSR to use its primary powers to specify all the consents that it would need to deploy.

ALARP. Shorthand for achieving (generally nuclear) risk that is As Low As Reasonably Practicable.

Approval.
Explanation: An Authorisee/Accreditee is required to submit its arrangements for Approval if so specified by DNSR.
Reason for use: An Approval is used to freeze an Authorisee/Accreditee's arrangements. Once approved no alteration or amendment can be carried out without further Approval by DNSR.

Approve. The action used throughout the Conditions (AC and ADAC), in which context it has the purpose of freezing arrangements and giving permission to proceed. Once regulatory Approval is given to a set of arrangements, they must not be changed or varied unless and until the changes have been formally re-approved.
Explanation: An Authorisee, Accreditee, Approving Authority or Design Authority is required to submit its arrangements for Approval if so specified by DNSR.

Approving and Design Authority (JSP 518). The Approving and Design Authority has the responsibility for safety across life cycle boundaries and delivery of a through life Design Authority function.

Approving and Design Authorities (JSP 538). The Approving and Design Authorities have the responsibility for the intrinsic safety of the nuclear weapon including components and

[34] IAEA Safety Glossary 2007. Terminology used in nuclear, radiation, radioactive waste and transport safety.

relevant support equipment across the NWP life cycle boundaries which are subject to their Approval and delivery of a through life Design Authority function.

Approving and Design Authorities Conditions. Those obligations that are applied by the DNSR-Hd as a condition of being Accredited to conduct specified activities in relation to the Nuclear Weapon Programme.

Assurance. The action taken to report to another party that the specified arrangements, organisation, situation or activities are in place in accordance with expectations. The process includes monitoring, audit, inspection and sampling, but excludes direct involvement to alter or take responsibility for specific actions or decisions. This does not preclude the ability to instruct operations to cease.

Audit. A systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

Authorisation. A regulatory mechanism through which the DNSR-Hd sets the Conditions permitting an Authorisee to establish their own safety arrangements whose adequacy must be demonstrable to the satisfaction of the DNSR.

Authorisation Certificate. A certificate provided by DNSR-Hd defining the scope of activities Authorised.

Authorisation Conditions. Those obligations that are applied by DNSR-Hd as a condition of being Authorised to conduct specified activities in relation to the Defence Nuclear Programme (DNP).

Authorised Site. A defined site within which nuclear activities are controlled by an Authorisee in compliance with the Authorisation Conditions and Further Authorisation Conditions.

Authorisee. The post-holder Authorised by the DNSR-Hd to operate in compliance with the Authorisation Conditions and Further Authorisation Conditions.

Authority. DNSR-Hd is charged with Authorising the conduct of defined activities that may entail a direct or indirect risk to nuclear safety, and with providing assurance that the requisite level of nuclear safety is being achieved.

Barrier. A means to:
a. prevent or inhibit the movement of people or radioactive substances, or some other phenomenon (e.g. fire);
b. provide shielding against radiation;
c. protect against some other potentially hazardous event.

Broadly Acceptable. A level of risk that is low enough that it should not cause particular concern to informed individuals potentially affected by it. The regulatory authorities consider that while even broadly acceptable risks should be rendered as low as reasonably practicable, they are unlikely to seek positive demonstration that such risks have been minimised.

Cause. The origin, sequence or combination of circumstances leading to a hazardous event.

Commissioning. The process by means of which systems and components of facilities and activities, having been constructed, are made operational and verified to be in accordance with the design and to have met required safety criteria[35].

[35] IAEA Safety Glossary 2007. Terminology used in nuclear, radiation, radioactive waste and transport safety

Competence. The ability to put skills and knowledge into practice in order to perform a job in an effective and efficient manner to an established standard.

Compliance Statement. A statement which identifies the management arrangements to achieve compliance with the Authorisation Conditions, Further Authorisation Conditions or Approving and Design Authorities Conditions.

Consent.
Explanation: A Consent is required before an Authorisee/Accreditee can carry out any activity for which DNSR has so specified.
Reason for use: A Consent is used to ensure an Authorisee/Accreditee does not carry out an activity before DNSR has been satisfied that the proposed course of action is safe and all necessary procedures and controls are in place, or that pre-requisites from a hold point control document have been met.

Consequence. The (usually undesirable) outcome deriving directly or indirectly from a hazardous event or a combination of events and circumstances.

Constraint. A limiting value of dose imposed by an operating authority on an employee or group of employees for a specified period, as an additional restriction to the legal limits, in order to further enforce the minimisation of individual dose.

Decommissioning. Administrative and technical actions taken to reduce hazards progressively and thereby allow the removal of some or all of the regulatory controls from a facility.

Defence. Many defence activities are conducted by contractors or partner organisations; the term “Defence” encompasses these as well as organisations within the Ministry of Defence.

Defence Nuclear Material. A generic term covering nuclear weapons and Special Nuclear Materials for the DNP.

Defence Nuclear Programme (DNP). The Defence Nuclear Programme comprises the Naval Nuclear Propulsion Programme (NNPP) and the Nuclear Weapon Programme (NWP).

Defence Safety and Environmental Authority (DSEA). DSEA regulates safety and environmental protection for those conducting defence activity, be they Armed forces personnel, MOD civilians, or contractors.

Design Authority. An approved Duty Holder who manages the system that ensures that vital features of the nuclear weapon system, facility, utility or nuclear plant are identified and maintained throughout life. The Design Authority is responsible for the provenance of the design documentation included in the safety case together with the through life specification of technical requirements and configuration management to maintain the design intent.

Design Intent. The Design Intent refers to the plan that the designer had for a particular component, system or subsystem to deliver a specific function. This function itself will be part of a plan for the delivery of key design parameters and attributes, including safety performance, set by the customer; this represents the highest level design intent. The design intent should be documented at various levels by functional and procurement specifications, design drawings, design descriptions and substantiations, including safety justifications. Where it is referred to in this JSP it must be taken to mean the Design Intent at the appropriate level according to context.

Design Organisation. An organisation responsible for designing a specific type of equipment.

Direction.
Explanation: A Direction requires an Authorisee/Accreditee to take a particular action.
Reason for use: A Direction is used for matters of major or immediate importance.

Diversity. The presence of two or more systems or components to perform an identified function, where the systems or components have different attributes so as to reduce the possibility of common cause failure, including common mode failure[36]. See also Redundancy.

Dose. See Effective Dose.

Duly Authorised Persons (DAP). Suitably Qualified and Experienced Persons who are Authorised to control and supervise operations which may significantly affect nuclear or radiological safety, where those responsibilities go beyond their normal managerial duties or across line management responsibilities. See also AC12 in Annex B to Chapter 2.

Duty Holder. A person who has direct responsibility for, and control of, activities that influence, directly or indirectly, the safety of the DNP.

Effective Dose. The quantity obtained by multiplying the equivalent dose to various tissues and organs by a weighting factor appropriate to each and summing the products. When comparing effective doses received to annual limits the contributions from external exposure and the committed effective dose from intakes of radionuclides in the same period should be included. Effective dose is measured in Sieverts (Sv).

Emergency Arrangements. Arrangements which are put in place in advance to enable the implementation of the emergency plan when required.

Emergency Plan. A plan designed to secure, so far as is reasonably practicable, the health and safety of persons who may be affected by such reasonably foreseeable emergencies as have been identified in a hazard identification and risk evaluation.

Endorse. To endorse a document is to express agreement to its content. Endorsement does not apply to subsequent revisions unless these too are subject to separate assessment and endorsement.

Environment. The total set of all external natural or induced conditions to which a materiel is exposed, during a specified period of time.

Event. An event is any occurrence:
a. that has or could have resulted in an unintended release of radioactive material, a failure of a line of defence or protection or a similar occurrence;
b. that could have given rise to a significant radiological consequence, on or off site;
c. that could significantly prejudice the requirements of a safety case or a breach of safety case requirements;
d. that may affect the safe operation or safe condition;
e. of safety interest or concern, including:
(1) human error;
(2) equipment or process failures that cause near misses;
(3) abnormal occurrences.

External Hazard. Natural or man-made hazards to a site and facilities that originate externally to both the site and the process, i.e. the Duty Holder may have very little or no control over the initiating event.

[36] IAEA Safety Glossary 2007. Terminology used in nuclear safety and radiation protection.

Facility. That part of a nuclear site identified as being a separate unit for the purposes of nuclear or radiological risk. This may be a single reactor, a group of processing plants as on a nuclear fuel-cycle facility or a dock and its support systems containing a naval reactor plant.
The term 'Facility' includes both the terms 'nuclear installations' as defined in the Nuclear Installations Act 1965 (as amended) and 'plant' as used in nuclear site licences granted by ONR. It also includes nuclear weapons, components and relevant support equipment.

Fissile Material. Any matter containing Uranium 233, Uranium 235 (>0.72%), Plutonium 239 or Plutonium 241, either singly or in any combination.

Further Authorisation Conditions. Conditions that address issues unique to the DNP (mobility of submarines and weapons for which there are no equivalent Licence Conditions.

Hazard. The potential for harm arising from an intrinsic property or disposition of something to cause detriment[37].

Hold Point. A point in any project or operation in the DNP beyond which progress is prohibited until predetermined criteria which provide safety assurance or risk mitigation are satisfied.

Incident. An undesired circumstance or near miss that has the potential to cause an emergency.

Independent Nuclear Safety Assessment (INSA). Provides an independent assessment of the adequacy of the Safety Justification documentation with regard to its basis, completeness and whether it demonstrates that the risk presented is acceptable in terms of the Safety Principles and Safety Criteria. INSA is independent of the organisation which generates the Safety Justification. INSA provides a continuous wide ranging independent review of the DNP in the context of national and international nuclear safety standards and Safety Principles and Safety Criteria.

Independent Peer Review (IPR). The examination of safety justification documentation by suitably qualified and experienced persons independent of the project to consider its acceptability and completeness and whether the safety case presented is acceptable when compared to established standards and criteria. The IPR will be commissioned by the organisation responsible for making the Safety Justification. Independence can stem from the use of resources outside the department producing the Safety Justification. An IPR will be done against well-defined terms of reference.

Individual Risk. The risk to any individual of premature death from cancer or other radiation effects as a result of exposure to ionising radiation during any one year, whether the death occurs during the year of exposure or subsequently.

Initiating Event. The cause and start point of a fault sequence which may originate either outside or inside a site or facility.

Inspection: The mechanism used to scrutinise management arrangements and the capability to carry out specified activities.

Intelligent Customer. The Duty Holder should have the necessary expertise and capability to be able to control and supervise its contractors, so as to maintain the ultimate responsibility for safety – this is referred to as 'intelligent customer' capability. The concept of the 'intelligent customer' relates to the organisation as a whole rather than the capabilities of individual personnel. The Duty Holder should retain sufficient intelligent customer capability to know what is required, to fully understand the need for a contractor's services, to specify requirements, to supervise work and to technically review the output before, during and after the work.

[37] Reducing risks, protecting people: HSE's decision making process, HSE Books 2001 ISBN 0 7176 2151 0.

Internal Hazard. A hazard to plant and structures that originates within the site boundary and over which the Duty Holder has some form of control over the initiating event.

Joined-up Regulation. The Duty Holder produces information once on a given topic and receives one response from one regulator, which incorporates the judgement of the other[38].

Licensed Site. A site in respect of which a Nuclear Site Licence has been granted by ONR under the Nuclear Installations Act 1965 (as amended), whether or not that Licence remains in force.

Licensee. The body corporate that has been granted a Nuclear Site Licence under the Nuclear Installations Act 1965 (as amended), which permits it to carry out a defined scope of activities on a delineated site.

Management Arrangements. Documented methods which describe how particular operations or activities will be controlled to meet the requirements of the Authorisation Conditions or relevant Safety Cases.

Modification. Any alteration to buildings, plants, operations, processes or safety cases including any replacement, refurbishment or repairs to existing buildings, plants or processes and alterations to the design of plants during the period of construction.

Naval Reactor Plant. The significant systems fundamental to the operation of the Nuclear Steam Raising Plant (NSRP). A meaning assigned to a nuclear reactor comprised in a nuclear powered warship (NPW), interpreted as if the NIA65 (as amended) applied.

Naval Reactor Plant Authorisee (NRPA). The Internal Safety Authority for the Naval Reactor Plant, authorised by DNSR for at-sea operation of the plant, and as Approving Authority for all phases of the plant life.

Normal Operation. Operation within specified operational limits and conditions[39].

Note. To acknowledge the existence of a document or arrangements. Noting a document does not imply that DNSR has examined the document or arrangements.

Notification. When so notified, an Authorisee, Accreditee, Approving Authority or Design Authority is required to submit information to DNSR.

Nuclear Emergency. This refers to a reactor accident, nuclear fuel accident, neutron source accident or a nuclear weapon accident, which may lead to a release of fissile or radioactive material or fission products.

Nuclear Matter. Subject to any exceptions prescribed in NIA and the Nuclear Installations (Excepted Matter) Regulations 1978, nuclear matter is:

a. any fissile material in the form of uranium metal, alloy or chemical compound (including natural uranium), or of plutonium metal, alloy or chemical compound, and any other fissile material which may be prescribed; and

b. any radioactive material produced in, or made radioactive by exposure to the radiation incidental to, the process of producing or utilising any such fissile material as aforesaid.

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[38] Definition from the LoU between ONR and UK DNSR states that: 'Joint regulation is an aspiration for Duty Holders to provide once, on a given topic, and receive co-ordinated responses from the regulators. In practice, it will be achieved by close alignment of Licence and Authorisation Conditions, common understanding of risks and hazards by regulators, sharing of information, and the adoption of common regulatory principles and philosophies.

[39] IAEA Safety Glossary 2007. Terminology used in nuclear safety and radiation protection.

Nuclear Safety. The state achieved when the probability and potential consequences of a Nuclear Emergency have been reduced to an acceptably low level and the potential for personnel exposure arising from normal work with ionising radiation has been reduced to levels which are as low as reasonably practicable.

Nuclear Safety Related. An equipment or system that provides a supporting role to nuclear safety and where failure leads to erosion of nuclear safety margins.

Nuclear Steam Raising Plant. A pressurised water reactor within a primary circuit and those other (non-nuclear) systems necessary to generate steam to enable propulsion.

Nuclear Weapon (NW). In this JSP the term is used to describe a nuclear device or warhead, excluding the delivery system.

Nuclear Weapon System. The entire stockpile of nuclear weapons, including facilities, activities and equipment necessary for operational use and safety.

Operating Instructions. Referred to in Authorisation Condition 24, in which they are defined as written instructions that:

a. provide step by step instructions on how to carry out an operation to ensure that it is done in the way assumed in the safety case;
b. ensure that operating conditions and limits are implemented;
c. are necessary in the interests of safety.

Operating Organisation. A body empowered to conduct nuclear operations within the DNP, either by itself or through prescription of a safe boundary and limits to an approved Duty Holder who is the respective operating authority.

Operating Rules. Referred to in Authorisation Condition 23 and are defined as the conditions and limits which bound the safety case from which they were derived. The conditions and limits ensure that the operation is conducted safely and could arise from consideration of:

a. the calculated limits of performance, to ensure that the limits and conditions of the design basis are not exceeded;
b. the limits of analysis, beyond which the performance of the system is unknown;
c. the limitations in the scope of safety case;
d. the need to ensure that engineered safeguards are in place.

Operational Berth. Any berth outside an Authorised site and not covered by an Authorised site's arrangements, which may be visited by a NPW. An Operational Berth may be in the UK, a British Overseas Territory (BOT) or a foreign country.

Operation(s). Operation includes maintenance, examination, testing and operation of the plant and the treatment, processing, keeping, storing, accumulating or carriage of any radioactive material or radioactive waste. "Operating" and "Operational" shall be construed accordingly.

Periodic Review of Safety. A comprehensive assessment of equipment, operations and safety cases against current standards required at appropriate intervals to demonstrate that the risks continue to be as low as reasonably practicable and that ageing and other time-related phenomena will not render operations unsafe before the next review.

Permissioning. The mechanism by which DNSR regulates hazardous activities, through the imposition of formal requirements on, for example, Operators[40], Designers, Builders or Maintainers to gain permission before conducting certain defined activities. The term 'permissioning' is used to encompass the regulatory controls 'consent', 'approval' and 'agreement'.

[40] i.e. those effecting safety related work subject to regulatory controls

Radiation Emergency. Any event (other than a pre-existing situation) which is likely to result in any member of the public being exposed to ionising radiation arising from that event in excess of any of the doses set out in Schedule 1 (of REPPIR) and for this purpose any health protection measure to be taken during the 24 hours immediately following the event shall be disregarded.

Radiation Safety. An integral part of nuclear safety and requires the implementation of radiation protection measures which ensure that personal exposure arising from normal work with ionising radiation is kept to levels which are as low as reasonably practicable.

Radioactive Material. Radioactive material is as defined in the Radioactive Substances Act 1993.

Radioactive Substance. Radioactive substance is as defined in Ionising Radiations Regulations 1999.

Radioactive Waste. Radioactive waste is as defined in Radioactive Substances Act 1993.

Reactor Accident. An unexpected event which is likely to lead to, or has resulted in, a release of fission products external to the fuel cladding.

Redundancy. Provision of alternative (identical or diverse) structures, systems or components, so that any one can perform the required function regardless of the state of operation or failure of any other[41]. See also Diversity.

Risk. The chance that someone or something is adversely affected in a particular manner by a hazard[42].

Risk Assessment. The quantitative evaluation of the likelihood of undesired events and the likelihood of harm or damage being caused, together with the value judgements made concerning the significance of the results.

Safety Case. In this document, 'safety case' refers to the totality of an Authorisee's, Accreditee's or Duty Holder's documentation to demonstrate safety. It must include a justification for the activity and demonstration of ALARP nuclear risk. A fuller definition of the requirements of a Safety Case is given in ONR TAG No. T/AST/051, "Guidance on the purpose, scope and content of nuclear safety cases".

Safety Category. The classification of nuclear weapons, nuclear plant, modifications or engineering work, or operations according to the potential consequences of failure.

Safety Clearance Letter. A letter issued by the NRPA signifying agreement that the nuclear risk to the public, workers and crew from initial criticality and subsequent operation of the "as-built" Naval Reactor Plant is ALARP. See also JSP 518 Annex C to Chapter 3 for details of the process to agree NRP criticality.

Safety Criteria. The numerical values against which the calculated risks arising from activities are compared as an aid in judging whether those risks are acceptable.

Safety Principle. A point of accepted best practice in corporate and engineering management which is (or is to be) adopted in the pursuit of nuclear safety.

[41] IAEA Safety Glossary 2007. Terminology used in nuclear, radiation, radioactive waste and transport safety
[42] Reducing risks, protecting people: HSE's decision making process, HSE Books 2001 ISBN 0 7176 21510

Safety System. A system that acts in response to a fault to prevent or mitigate a radiological consequence.

Site Safety Case. The documentation which demonstrates that sites and organisations supporting nuclear weapons and nuclear powered warships at various stages in their Defence Nuclear Programme life cycle maintain ALARP nuclear risk while so doing[43].

Special Nuclear Material. Plutonium, High Enriched Uranium (HEU) and Tritiated materials.

Specification:
Explanation: A Specification issued by DNSR requires an Authorisee/Accreditee to implement the specified arrangements.
Reason for use: A Specification is the means by which DNSR can implement discretionary control over an Authorisee/Accreditee's arrangements.

Suitably Qualified and Experienced Persons. The term used in Authorisation Conditions 12 & 26 which is defined as those persons whom the Authorisee, Approving Authority or Design Authority considers suitably qualified and experienced to perform duties which may affect nuclear and radiological safety.

Target. A value of individual dose or collective dose set by an intelligent customer, or may be self-imposed by an operator or designer, so that in the design of new nuclear plant, nuclear weapon or component or in the planning of an activity involving radiation exposure, dose is minimised by good dose management and dose limiting values are not exceeded.

Transport. The deliberate physical movement of radioactive material (other than that forming part of a means of propulsion) from one place to another[44]. From a regulatory perspective 'transport' comprises all operations and conditions associated with, and involved in, the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages [from IAEA SSR-6 para 106].

Unacceptable. A level of risk that is high enough to cause serious concern to informed individuals who are subjected to it. The regulatory authorities consider that such a risk should not be permitted in normal circumstances, and only permitted in order to avert greater risks in the course of serious emergency.

Utility. A supporting plant system such as a power distribution system which has no inherent radiological hazard but which is safety related because failure could have an adverse effect on the safety of another facility or nuclear plant.

[43] The ALARP justification may include consideration of risks in other stages of the life cycle. Note that specific or unusual site activities in response, for example, to emerging defects, might require individual ALARP justifications.
[44] IAEA Safety Glossary 2007. Terminology used in nuclear, radiation, radioactive waste and transport safety

ABBREVIATIONS

This section provides a common JSP 518/538 list of abbreviations as used specifically in regulatory documents.

AA	Approving Authority/Authorities
AC	Authorisation Condition(s)
ADA	Approving and Design Authority
ADAC	Approving and Design Authorities Conditions
AF&F	Arming Fuzing and Firing
ALARP	As Low As Reasonably Practicable
ASND	Autorité de Sûreté Nucléaire et à la radioprotection pour les activités et installations intéressant la Défense
AWE	Atomic Weapons Establishment
BR	Book of Reference
BSL	Basic Safety Level
BSO	Basic Safety Objective
CASD	Continuous at Sea Deterrence
CBA	Cost Benefit Analysis
CLOSO	Conditions and Limits of Safety Operation
CSSE	Chief Strategic Systems Executive
DA	Design Authority
DAP	Duly Authorised Person(s)
DBA	Design Basis Analysis
DfT	Department for Transport
DMR	Defence Maritime Regulator
DNESB	Defence Nuclear Environment and Safety Board
DNM	Defence Nuclear Material
DNP	Defence Nuclear Programme
DNRF	Defence Nuclear Regulatory Forum
DNRSC	Defence Nuclear Regulation Stakeholder Committee
DNSC	Defence Nuclear Safety Committee
DNSR	Defence Nuclear Safety Regulator
DO	Design Organisation
DOSR	Defence Ordnance Safety Regulator
DRDL	Devonport Royal Dockyard Ltd
DSTL	Defence Science and Technology Laboratory
DSEA	Defence Safety & Environment Authority
EA	Environment Agency
EAC	Environmentally Assisted Cracking
ECCS	Emergency Core Cooling System
EIMT	Examination, Inspection, Maintenance and Testing
EOP	Emergency Operating Procedures
EPR	Environmental Permitting Regulations
ESDA	Excessive Steam Demand Accident
EU	European Union
FAC	Further Authorisation Condition(s)
GoG	Government of Gibraltar
HASS	High Activity Sealed Source
HAZID	Hazard Identification
HIRE	Hazard Identification and Risk Evaluation
HMNB	Her Majesty's Naval Base
HS&EP	Health, Safety and Environmental Protection
HSE	Health and Safety Executive
HSWA	Health and Safety at Work etc. Act 1974
IAEA	International Atomic Energy Agency

ICRP	International Commission for Radiological Protection
IM	Insensitive Munitions
INES	International Nuclear Event Scale
INSA	Independent Nuclear Safety Assessment
IoF	Incredibility of Failure
IP	Intervention Plan
IRR	Ionising Radiations Regulations
IS	Intervention Strategy
ISR	Immediate Safety Requirement
JSP	Joint Service Publication
LC	Licence Condition(s)
LCP	Life Cycle Phase
LLC	Local Liaison Committee
LOCA	Loss of Coolant Accident
LOD	Line(s) of Defence
MAA	Military Aviation Authority
MOD	Ministry of Defence
MPS	Multi-Point-Safe
NEBUST	Nuclear Emergency Backup Support Team
NBC	Naval Base Commander
NIA	Nuclear Installations Act 1965?
NNPP	Naval Nuclear Propulsion Programme
NPR	Nuclear Propulsion Regulator
NPW	Nuclear Powered Warship
NR(EIAD)R	Nuclear Reactor (Environmental Impact Assessment of Decommissioning) Regulations
NRP	Naval Reactor Plant
NRPA	Naval Reactor Plant Authorisee
NRTE	Naval Reactor Test Establishment
NRW	Natural Resources Wales
NSC	Nuclear Safety Committee
NT	Numerical Target
NW	Nuclear Weapon
NW ADA	Nuclear Weapon Approving and Design Authority
NWP	Nuclear Weapon Programme
NWR	Nuclear Weapon Regulator
NW SPSC	Nuclear Weapon Safety Principles and Safety Criteria
OB	Operational Berth
OECD	Organisation for Economic Cooperation and Development
ONR	Office for Nuclear Regulation
PRS	Periodic Review of Safety
PLEX	Plant Life Extension
PRT	Power Range Testing
PSA	Probabilistic Safety Analysis/Assessment
PSI	Pre-Service Inspection
PUS	Permanent Under Secretary
QA	Quality Assurance
RA	Radioactive
RAM	Radioactive Material
R&D	Research and Development
REPPIR	Radiation Emergency (Preparedness and Public Information) Regulations
RPC	Regulatory Policy Committee
RPV	Reactor Pressure Vessel
RSA	Radioactive Substances Act 1993?
RSD	AMEC Regulatory Support Business Area
SAP	Safety Assessment Principle(s)

SEPA	Scottish Environment Protection Agency
SFAIRP	So Far As Is Reasonably Practicable
SFC	Single Failure Criterion
SI	Statutory Instrument
SIN	Safety Improvement Notice
SINS	Security-Informed Nuclear Safety
SJ	Safety Justification
SMDC	Safety Mechanisms, Devices and Circuits
SNM	Special Nuclear Material
SNMR	Special Nuclear Material Requirements
SofS	Secretary of State
SOL	Start-of-Life
SPS	Single-Point-Safe
SPSC	Safety Principles and Safety Criteria
SQEP	Suitably Qualified and Experienced Persons
SSC	System, Structure or Component
Sv	Sievert
SW PT	Strategic Weapons Project Team
TAG	Technical Assessment Guide
TEA	The Energy Act 2013
WH	Warhead