DEFENCE NUCLEAR ENVIRONMENT AND SAFETY BOARD

2007 ASSURANCE REPORT[1]

OVERVIEW

1. My assurance report from the Defence Nuclear Environment and Safety Board (DNESB) covers the calendar year 2007. The DNESB oversees nuclear and radiological safety and environmental protection in the naval nuclear propulsion and nuclear weapons programmes. This report presents a summary compilation of assurance gathered by the independent Defence Nuclear Safety Regulator (DNSR); its conclusions have been noted by the implementers in both programmes.

2. I am pleased to note that the Authorisation of both nuclear programmes was completed in 2007. Looking ahead to the coming year, I consider the need for strong control of organisational change to remain the principal threat to safety performance in the medium term: sound control is nonetheless the force behind some of the strengths included in this report.

ASSURANCE ASSESSMENT

3. DNSR has assessed that those responsible for the Naval Nuclear Propulsion Programme (NNPP) and the Nuclear Weapon Programme (NWP) have maintained a high standard of nuclear and radiological safety for the submarine crews, the workforces, the public and the protection of the environment. The demonstrability of this performance to accepted modern standards is good in some parts of the programme, but needs improvement in others. There have been some welcome initiatives that promise to resolve some long-standing safety issues in both programmes. Implementers will need to sustain priority for these initiatives over a period of years (in most cases) until they deliver benefits; this will not be easy within defence resources.

4. On the basis of the assurance provided by DNSR and dialogue with the dutyholders, I am satisfied that an acceptable standard of nuclear and radiological safety and environmental protection has been maintained in the operation and delivery of the nuclear propulsion and weapons programmes. Safety behaviour is generally appropriate in the nuclear programmes, underpinned by effective systems for safety and environmental protection. But there are a number of issues which present risks to compliance, or to demonstrability of compliance, with SofS's Safety and Environment Policy Statement and which nuclear programme implementers should therefore regard as potentially significant risks to their programmes.

ISSUES & RISKS

5. Eleven significant issues are presented in the table below. In the table, *Regulatory Risk* is interpreted as the risk to:

- protection of the workforce, the public and the environment;
- compliance with SofS Safety & Environment Policy Statement in respect of relevant legislation, government policy and MoD requirements (as expressed in JSPs);
- demonstrability of such compliance.

[1] This report is for the Defence Environment and Safety Board (DESB), the Defence Nuclear Safety Committee (DNSC) and the Defence Nuclear Executive Board (DNEB).

Current risk is the current likelihood of the Regulatory Risk prior to Strategies and Controls being implemented. A high (red) current risk suggests that significant regulatory action might be necessary within a year; medium and low risks have a commensurately longer realisation period. The level of current risk stated is a judgement of the significance within the defence nuclear programmes; no attempt has been made to calibrate these levels against the levels of risks in other safety environments.

6. Progress has been made in addressing all the key issues presented in the 2006 Report. Most of these are challenging and long term issues. One of the issues no longer appears in this table and is being managed as normal business, while all others remain, updated to reflect the progress that has been undertaken and with the risk rating adjusted according to the action already taken. One new issue has been included. In this report no red risks are identified: 6 are assessed as amber and 5 as green.

7. None of the risks reflect an immediate safety or environmental concern. Most are related to compliance, the demonstrability of compliance, and the associated processes. But without this compliance it will be increasingly difficult to continue to substantiate that the defence nuclear programmes are being managed with due regard for the protection of the workforce, the public and the environment.

(Arrows indicate whether the level of risk is currently assessed to be improving ↑, degrading ↓, or remaining steady →.)

Issue	**Regulatory Risk**	**Suggested Strategy & Control**	**Owner & Manager**	**Current Risk**
1. **Control of Organisational Change and Funding.** *2006 Issue 1 modified.* Proactive compliance with extant processes for control of organisational change and resources (AC36) needs to be implemented rigorously for all proposed change. (Para 9-13)	Risk to compliance with JSPs 518 & 538	Creation of robust organisational baselines; assessment of safety implications of reductions in funding; early consideration of potential changes under AC36 disciplines.	DGSM, COM(Fleet) & Fleet Manager - Authorisees	 ↓
2. **Contracting Strategy**. *2006 Issue 2 updated.* The need to ensure that desired safety outcomes and behaviours are maintained or enhanced while performance is commercially incentivised (Para 14)	Risk to demonstrable compliance with legislation and MOD requirements	Monitor safety performance under the NPSA (formerly FRPS) contract and carry lessons across to other defence nuclear programme commercial strategies as appropriate.	DGSM Manager – IPTLs	 ↑

Issue	Regulatory Risk	Suggested Strategy & Control	Owner & Manager	Current Risk
3. **Safety Case Improvement.** *2006 Issue 3 updated.* The development of safety analyses by the plant and weapon approving authorities and the use of these analyses by Authorisees in their safety cases remains inconsistent. (Para 15-16)	Risk to demonstrable compliance with requirements and ALARP demonstration	a. Continue the development of integrated (plant-site & weapon-site) safety cases. b. Use the APNSC as the baseline for development of NRP Safety Cases as good relevant practice for current and future classes. c. Use realistic costs and benefits in assessing ALARP options.	DGSM & COM(Fleet) Manager – Authorisees & Approving Authorities	A →
4. **Performance measurement and learning.** *New issue.* Objective performance measurement needs to be developed in accordance with national practice and learning from experience strengthened (Para 17)	Risk to demonstrable compliance with legislation and regulatory requirements	a. Collaborative development of safety performance indicators to inform the national framework. b. Strengthen Learning from Experience.	DGSM, COM(F) and FLEET Manager – Authorisees	A →
5. **Control of Work.** *2006 Issue 5 modified* There has been improvement but sharing good practice between authorisees needs to be continued. (Para 19)	Risk to workforce and public safety and to the environment, in both short and longer term.	a. Maintain current momentum in identifying and implementing best practice. b. Apply at all sites.	DGSM & COM(F) Manager - Authorisees	A ↑
6. **People.** *2006 Issue 6 modified.* Present and future shortage of NSQEP personnel among MOD civilian, RN and contractors. (Para 20-22)	Risk to compliance and to safety.	a. Continue to fund and implement DGSM initiatives for MOD civilians. b. Continue proactive engagement in national dialogue.	DGSM Manager – DGSM/SSD	A ↓
7. **Co-operation.** *2006 Issue 7 modified.* Co-operation between Authorisees and between Authorisees and Approving Authorities needs to be improved (Para 23-24)	Risk to compliance with JSPs 518 & 538	a. Develop and agree documented arrangements between Authorisees. b. Develop and agree documented arrangements between Authorisees and Approving Authorities.	DGSM & COM(F) Manager – Authorisees & Approving Authorities	G →
8. **Emergency Response.** *2006 Issue 8 modified.* The technical approach underpinning Reviews of Assessment under REPPIR have not accorded with standard UK practice. (Para 25)	Risk to demonstrable compliance with legislation	Continue to implement programme to deliver a sound technical submission by Feb 08.	DGSM Manager – DGSM/SSD	G ↑
9. **Warhead Modification.** *2006 Issue 9 modified.* The approvals process and the process for provision of	Risk to demonstrability of compliance with JSP538	Complete accreditation of Approving / Design Authorities	DGSM Manager - DNW	G

Issue	Regulatory Risk	Suggested Strategy & Control	Owner & Manager	Current Risk
information with provenance to authorisees need to be updated. (Para 27)				↑
10. **Nuclear Transport.** There are inconsistent arrangements for the transport of nuclear weapons, special nuclear material and reactor fuel which is exempt from legislation. Cross-fertilisation, efficiency and adoption of best practice are inhibited. (Para 29)	Risk to demonstrability of compliance of transport safety arrangements with Departmental standards	a. Enhance scope of authorisation to include SNM in the weapons programme. b. Explore improved commonality between weapons/SNM transport and fuel transport arrangements.	DGSM Manager – ADLM & DNP	G ↑
11. **Decommissioning & Disposal.** *2006 Issue 11 modified.* There is no funded decommissioning strategy to implement the agreed Defence Decommissioning Policy. (Para 31-32)	Risk to demonstrably meeting SofS policy, MoD requirements, wider government policy, and international treaty commitments.	a. Continue the development of the DGSM decommissioning strategy. b. Identify funding to meet the decommissioning liabilities declared in the MOD accounts.	DGSM Manager – DGSM/SSD	A ↑

PROGRESS & SUCCESSES

8. In 2007, those responsible for implementing the nuclear programmes have:

a. Safely maintained Continuous At Sea Deterrence (CASD) and delivered the required military capability from the Submarine Arm;

b. Achieved Authorisation of operations at AWE sites and extended the scope of authorisation at Clyde Naval Base to include nuclear weapons activities; all Life Cycle Phases in the NWP are now working under authorisation;

c. Safely maintained operational outputs from the NWP, progressed the facility and design aspects of the NWCSP, and re-introduced previously lost technical capabilities of significant importance to the future NWP;

d. Published pan-NNPP Naval Nuclear Safety Principles, prepared by the NRP Approving Authority and agreed with Authorisees;

e. Safely progressed the manufacture and commissioning of ASTUTE Class submarines, in preparation for the first core load and critical operations in 2008, with significant improvement in the structure of ASTUTE class safety cases to inform commissioning;

f. Following Parliamentary agreement to the requirement for an SSBN successor, established the Future Submarine Project, and commenced a 2 year concept

phase, scheduled to complete in Sep 09, with appropriate regulatory engagement from DNSR;

g. Undertaken an SSN visit to Portland following successful reinstatement of this operational berth, agreed with statutory regulators;

h. Satisfactorily managed a significant programme of change, and pressure for change, including the formation of DE&S, Fleet Transformation, Naval Base Review, and major organisational and contractual change in the NPIPT, with appropriate application of the principles of compliance with AC36.

ISSUES AND COMMENTARY

9. **Organisational Change.** It is encouraging to note that the revision to SofS's Safety and Environment Policy Statement includes a specific requirement for assessment of the effect of organisational change on environment and safety management. This adds a desirable formality to the previous approach in which I gave agreement as necessary to management changes above one-star level with the potential to affect nuclear safety; DNSR has authority in respect of authorisees (generally at one-star) by virtue of authorisation conditions.

10. With the merger of the DPA and DLO to form DE&S, DG Nuclear was renamed DG Submarines (DGSM). The simplification and clarity of reporting lines above DGSM, and improved corporate arrangements in DE&S was welcome, but due to the changes instigated previously on the establishment of the DGSM cluster working across both former TLBs, there was limited immediate change in the DGSM cluster itself. There has thus been no significant change in the established arrangements for the management of safety and environmental protection within DGSM. The publication of the future vision for the DGSM cluster, and notably the appointment of a 1* Chief Engineer and Safety Director is welcomed, and the development and implementation of arrangements and processes will be watched closely. In organisational terms, the Naval Bases under Chief of Materiel (Fleet) have moved further from DGSM, but this appears not to have affected the interactions between the bases and staff in the DGSM cluster.

11. Among the defence contractor licensees, the most significant change has been the transfer of ownership of the DML group and the establishment of Babcock Marine. This offers enhanced incentives for the sharing of best practice between Clyde, Devonport and Rosyth. Within Babcock Marine, Devonport Royal Dockyard Limited (DRDL) will remain the Licensee and Authorisee for activities in the Devonport Dockyard nuclear site, with active dialogue ongoing with DNSR and the NII to ensure that the necessary legal and management arrangements are in place.

12. The rate of change is likely to remain high in 2008, with the introduction of further change in DE&S (the PACE programme), the Department's response to the Administrative Costs Regime, the implications of Head Office Streamlining, and radical options for the Naval Bases still under consideration. This section of last year's report concluded "… generally the right compliance statements and management arrangements are in place: but there is often poor behaviour in proactive compliance with these arrangements." There is no evidence that the conclusion should be different this year. DNSR issued some further guidance during 2007 on best practice in demonstrating compliance with AC36. One element of this is that there must be a robust analysis in all organisations of

the level of skills and competence that are essential to effect the necessary control and to retain an intelligent customer capability.

13. **Funding**. Furthermore it is noteworthy that Authorisation Condition (AC) 36 requires Authorisees to have and implement adequate arrangements to control any changes to its organisational structure *or resources* which may affect safety. Often, in Government, the management approach is to first impose a reduction in resource (funding), and only then to assess its implications. Affordability is often a key issue for dutyholders, but affordability must never be allowed to affect safety (and environmental) performance. At a recent safety culture seminar, organised by DGSM with wide attendance from across the nuclear programmes, the strapline, "*Proper proportional safety can never be trumped by programme or resource constraints"* was developed and seen as important. In managing the Department's response to the significant funding pressures that it will face in 2008, any potential implication on safety performance is assessed at the earliest possible stage.
(Issue 1 – continues)

14. **Contracting Strategy.** DNESB reports have, for several years, noted the significance of appropriate commercial strategies in incentivising appropriate safety behaviour. Against this, as reported last year, the development of the Flotilla Reactor Plant Support Contract (now renamed the NPSA) with Rolls-Royce is a positive move whose impact on safety performance is being monitored. As this contract was let in the Summer 2007, it will take some time to assess whether the intended safety behaviour does develop, and any undesired secondary effects. Informed by this, it may be considered appropriate to extend the principles of this commercial strategy across the defence nuclear programmes, including submarine upkeep activities, the Future Submarine Project, and any further developments in Naval Base contracting.
(Issue 2 – continues)

15. **Safety Case Improvement.** There have been some significant and welcome developments in this area. For the Propulsion Programme, Naval Nuclear Safety Principles (NNSP) were published during 2007 providing welcome evidence of improved co-operation between the propulsion Approving Authority (DNP) and Authorisees. The structure of the ASTUTE Plant Nuclear Safety Case (APNSC) now follows current IAEA guidance. The development of build assurance and operating legs, coupled with the design safety case and commissioning section have provided the basis for a modern-standards safety case. This will be developed in the PWR2 through life safety case, which will address some of the known deficiencies in the APNSC to provide an operational safety case to current standards. The safety cases for later Astute class and the Next Generation Propulsion Plant for the Future Submarine must address the other deficiencies in the APNSC in the areas of high integrity justifications and derivation of commissioning requirements for example. Work continues under contract with Rolls-Royce on the "shut-down" safety analysis to inform properly integrated (plant-within-site) safety cases for activities in the NNPP. Concern is developing that the site Authorisees, who will use this analysis, are not making adequate progress in arrangements to integrate it into their facility safety cases, and that the analysis from the SDSC will not be available in a timescale to allow integrated safety cases such that the proposed benefits are realised. Similarly, DNW (with AWE) and DSWS are delivering "operational" safety cases for the NWP in respect of Clyde and "at sea" life-cycle phases, which is the first NWP safety documentation to address issues such as human factors. It is not yet clear how easy it will be for Clyde to develop properly interfaced facility safety cases from this information. Initial regulatory consideration will be given to understanding the claims for the intrinsic safety of the warhead and comparing them with previous approaches for Burghfield.

16. **Continuous Improvement and ALARP**. It is a fundamental statutory requirement for safety cases to demonstrate that the risk of an activity is ALARP. Across both programmes, the demonstration of this is often weakened by a number of common factors. Cost benefit analysis, conducted to help establish whether an option to reduce risks is reasonably practicable to implement, is sometimes heavily influenced by excessive estimates for minor changes from major contractors, and weak demonstration of the benefits. This can be exacerbated by delays in working up identified improvements, so that implementation opportunities are missed, thus weakening the cost-benefit argument. Indeed ALARP arguments are often presented to justify why an available improvement should not be implemented, rather than why it should. Finally the absence of integrated safety cases makes decisions about spending priorities more difficult.
(Issue 3 – continues with risk returning to amber)

17. **Performance Measurement and Learning.** International guidance on nuclear safety (which underpins legislative requirements) recommends the measurement in an objective manner of safety performance, one element of which ought to be an organisation's ability to learn from its own and others' experience. Prompted in part by regulators and work done in the civil nuclear sector, the development of safety performance indicators has been started by licensees/authorisees which should aim to inform a common national framework. Arrangements for Learning from Experience (LFE) are well developed by some licensees but less effective amongst authorisees. The highest potential for LFE externally might be expected from other authorisees in the same programme, but arrangements to enable this appear immature.
(Issue 4 – new)

18. **Naval Bases.** The improved situation at the Clyde Naval Base, evident last year, has continued as the direction and pace outlined in the Nuclear Safety Strategy are maintained. A significant milestone has been the extension of Clyde's authorisation status to include nuclear weapon activities although there is a considerable forward action plan associated with this. Work is progressing on the construction of the Valiant SSN jetty. The development of an integrated vessel support programme, with appropriate regulatory holdpoints, provides a sound basis for regulation. The Naval Base Review confirmed the scope of activities at Clyde (and Devonport) for the foreseeable future, and this has helped to provide stability. A watch is being kept on progress with partnering / outsourcing strategic systems work particularly at Coulport.
(2006 Issue 4 – removed from issues list)

19. **Control of Work.** Control of work – the effective control of potentially hazardous activities – has been an issue across the NNPP, with formal regulatory action taken by the NII at both Devonport and Barrow. Occasionally concern over quality of work and its potential impact upon the future nuclear use of the plant arises; at times these are understated due to their low impact to "safety on the day". Much work is being undertaken by the dutyholders in response to this, including sharing of best practice across the defence nuclear programmes, benchmarking best practice at civil nuclear and other hazardous industry sites, reviewing processes, understanding safety behaviours, and training staff. Much remains to be done, and it is essential that the current momentum is maintained and applied across all sites.
(Issue 5 – continues)

20. **People.** There is no doubt that the continued availability of sufficient suitably qualified and experienced personnel, both for MOD itself and for defence contractors, is one of the greatest challenges to the sustainable future of the defence nuclear

programmes in the medium term. At present MOD has an underbearing of nearly 10% of civilian NSQEP posts. But there have been some encouraging developments in 2007. DE&S corporately has recognised that upskilling is key to its future success, which has provided a welcome framework. DGSM has refined his analysis of the demand and supply of NSQEP staff, and most importantly has gained corporate funding and approval, for the annual recruitment of 22 graduates and 22 technicians (advanced modern apprenticeships) and for their initial nuclear training, and additionally for a training margin of 6 posts to allow mid career development. There remain several uncertainties, not least the level of churn – of experienced MOD NSQEP moving to other employers.

21. There is currently adequate NSQEP within the RN nuclear communities (NNPP & NWP), with little significant concern over the quality of qualification and experience. There is, however, already fragility in the quantity of people in a number of specific areas, which places increasing pressure on essential staff. The potential emergence of a civil new build programme means that supply of this key cohort is not guaranteed into the future. Fleet/2SL is well aware of this and is seeking to put in place long term measures to recruit, retain and motivate RN NSQEP.

22. For defence nuclear contractors the position cannot and should not be managed by MOD: it is up to employers to attract the right people. But nuclear is starting to be seen as an exciting option by graduates and others. Notably AWE plc and Rolls-Royce Naval Marine have recruited successfully as they have re-built their workforces in response to the programmes ahead.
(Issue 6 – continues.)

23. **Co-operation.** Progress has been made in developing the formal arrangements for co-operation between the Naval Reactor Plant Authorisee (NRPA) and NNPP site Authorisees/Licensees, with significant effort now being deployed, but more remains to be achieved. The inspection of these arrangements continues to be a priority for DNSR. There is further work to do in distinguishing NRPA's role as authorisee for operations in the geographic area outside authorised sites (at sea and at operational berths) from the plant Approving Authority role. With the authorisation of all life-cycle phases in the NWP completing during the year, attention now needs to be given to formalising co-operation between them (eg adding clarity to the transfer of responsibilities as weapons are moved and outloaded) and by each of them with the Approving / Design Authorities who have yet to be accredited. As a result of policy developments, DNSR plans to articulate the requirements for co-operation in a more explicit manner. (Issue 7 – continues but modified)

24. Revised safety regulatory requirements have been published for all operational berths[2]. This transfers the responsibility for all operational berths from Site Authorisees to the NRPA (and CSSE for NW aspects), managed by Fleet. Implementation for UK Berths is expected in 2008 in parallel with the REPPIR submission, providing a welcome clarity in the basis for regulation of these berths. Implementation for overseas berths will follow in a staged manner.

25. **Emergency Response.** Significant progress has been made towards the submission for the 2008 REPPIR[3] round which was the subject of a DNSR Safety

[2] Operational berths are all nuclear submarine berths not located on an Authorised or Licensed Site, including UK commercial ports, UK overseas territories and foreign berths.
[3] The Radiation (Emergency Preparedness and Public Information) Regulations, which require an assessment of whether a radiation emergency is reasonably foreseeable, and if so, the determination of the required detailed emergency planning zone.

Improvement Notice in 2005. Regulators have been briefed on the developments and intentions, prior to the formal submission in early 2008, notably the adoption of a reference accident approach, underwritten after considerable debate. Assessment of these submissions will be a formally agreed joint NII/DNSR activity. It is hoped that this analytical approach will allow the improvement notice to be closed. The analysis suggests a reasonably foreseeable radiation emergency dominated by gamma-shine.
(Issue 7 – continues.)

26. 16 nuclear emergency demonstration exercises were conducted in 2007 including the Grade A SHORT SERMON at Devonport Naval Base. Despite some difficulties with specific issues, generally positive outcomes were achieved, but it is clear that management must continue to give emergency response due attention to maintain standards. The establishment by the defence nuclear operators of a Nuclear Emergency Arrangements Group, to facilitate sharing of best practice and lessons learned, is most welcome. Off-site management of a radiation emergency continues to be challenging to both defence and civil nuclear emergency response, with the influence of the UK Resilience arrangements challenging some established practice. The multi-agency response off-site is regulated by the NII. The Nuclear Emergency Planning and Liaison Group (NEPLG) consolidated guidance is under revision, and will formally apply to both civil and defence nuclear emergencies. Planning was set in hand for Exercise SENATOR 2008 [redacted]. Notable during the period was the first off site plan that was written and tested by the Government of Gibraltar under its own REPPIR legislation.

27. **Warhead Modification.** Confidence is increasing that [redacted]. Completion of authorisation in all Life Cycle Phases[4] adds confidence that safety cases relating will be reworked through adequate due process. However, the continuing delays to accreditation of the Approving / Design Authorities increases the risk that due process for intrinsic safety will be less satisfactory.
(Issue 9 – continues but reduced to green.)

28. **AWE.** Authorisation of operations at AWE was achieved in July 2007, and in parallel both regulators and the company have focussed on improving compliance with license / authorisation conditions. The significant programme to update AWE facilities gathers pace with good progress on the new assembly/disassembly facility at Burghfield. However, the signalled delay for the new hydrodynamics facility increases the probability that additional activities will need to take place in existing elderly facilities.

29. **Nuclear Transport.** A decision, briefed in advance to DNSR, was taken within the DGSM cluster to transfer the stand-alone Nuclear Movements team under the line management of Director Nuclear Weapons as Assistant Director, Logistics and Movements. Whilst acceptable in principle, the details will need to be worked out under control of organisational change arrangements (AC36) preserving management functions essential for safety under direct control of the authorisee. The transfer was accompanied with the welcome declaration of continued stability for the delivery of convoy capability and the intent to use a single vehicle in future for both weapon and special nuclear material (SNM) loads. Also welcome is the proposal to complete delayed work to encompass SNM transport under the scope of authorisation. This helps to answer the management of

[4] Authorisation of LCP3 was achieved on 27 Nov 07.

nuclear transport issue raised in previous reports, with the exception that no proposal is forthcoming for reactor fuel transport.
(Issue 10 – continues but reduced to green)

30. A solution, acceptable in principle, has been suggested to resolve the outstanding Safety Improvement Notice in respect of the air transport of highly enriched uranium loads, but this remains to be put into effect.

31. **Decommissioning and Disposal.** Following the DNEB endorsement in 2006 of the Nuclear Decommissioning and Disposal Policy, its recent publication on the MOD internet, together with a factsheet, is appropriate and welcome, as is the increasing joint working between DGSM and the NDA[5]. DGSM's development of the overarching strategy to implement this policy has taken longer than stated in last year's report, and is now expected in Spring 2008. The rigorous and robust approach being developed, similar to the NDA's approach and processes (including life-cycle baseline reviews), seems entirely appropriate, and the strategy will be given appropriate regulatory scrutiny once published. But while the principle has been established that decommissioning and disposal must be funded, a customer is identified, with a funding line in the DNEIP, and the liabilities are identified in the MOD accounts, the key challenge will continue to be the allocation and sustainment of the funding to meet these defined liabilities.

32. Meanwhile the number of submarines arriving at Devonport for preparation for fuelled laid up storage continues to increase. And good progress is being made in the development of the new submarine defuelling facility, to commence operation in 2012. As stated in last year's report, "while the real hazard (from both safety and environmental perspectives) from fuelled paid-off submarines is very low, decommissioning and disposal of the submarines has a significant public profile with the potential to influence stakeholder acceptance of future programmes; committed funding and a stable programme would do much to allay stakeholder and regulatory concerns in this emotive area."
(Issue 11 – continues.)

REGULATORY ACTIVITY

33. **Organisation and resources.** The Defence Nuclear Safety Regulator is hosted in the DE&S TLB within the DG Safety & Engineering cluster. A DNSR Through-Life Management Plan has been produced and endorsed by myself as DNESB Chairman and DGS&E. This facilitates DNSR's independence, establishing me, on behalf of 2nd PUS, as DNSR's single customer (and source of delegated regulatory authority) and secures DNSR's resources provided by DE&S DGS&E. DNSR's professional strength remains at 20 posts although 4 of those have been gapped at some stage during 2007; internal recruitment action is in progress to fill these vacancies.

34. **Activity Summary.** In regulating the defence nuclear programmes and seeking assurance about safety DNSR has:

a. permissioned 32 significant nuclear activities;

b. reviewed at least 83 documented safety submissions;

c. conducted 104 planned inspections (many jointly with NII) and 4 reactive inspection and investigation in response to unplanned events;

[5] A formal agreement has recently been signed by DGSM and CE/NDA.

d. assessed 19 emergency response exercises and a further 4 smaller scale demonstrations on particular aspects of the arrangements;

No Safety Improvement Notices or Immediate Safety Requirements were issued.

35. **Joint Regulation.** The practice of joint regulation has been further developed with all relevant statutory regulators during 2007. In particular:

a. DNSR and NII staff now meet routinely to develop and review intervention strategies and plans for the defence licensed sites. Joint inspection and assessment activities are becoming the norm, but further integration is envisaged.

b. Joint regulation activities and processes with the EA and SEPA are increasing and developing well, although the development of the MOD/SEPA agreement and its radiological annex have been delayed.

c. A Letter of Understanding was signed with the Department for Transport Dangerous Goods Division (DfT/DGD), replacing a 1982 version. By virtue of this LoU, DfT are assisting DNSR to develop its Competent Authority capability for radioactive materials transport in the defence nuclear programmes. A member of DfT/DGD is seconded part-time to DNSR, and other expertise is also available.

d. DNSR staff are participating in the DOSG Operational Safety Review Panel (OSRP) deliberations on the safety case report submitted in respect of the Trident All-up Round (less at this stage the warhead); consideration is being given to the application for a Certificate of Safety (Ordnance Munitions and Explosives) under JSP520 requirements for inherent safety.

e. The appointment of the Minister with Responsibility for the Environment as the Competent Authority for Gibraltar IRRs and REPPIR. DNSR is actively cultivating a joint working approach for regulatory activities in Gibraltar.

36. While joint regulation with external statutory regulators has developed apace over recent year, much remains to be done to integrate processes better with other MoD regulatory authorities. Work has commenced to maximise the potential of joint working with ship safety authorities and nuclear security policy makers.

37. **Regulatory Policy.** Through a process of informal and formal consultation (including the use of Green and White Papers), DNSR has developed the framework for the revised JSPs 518 and 538, maximising commonality in the process. The framework acknowledges the advent of JSP815 (Defence Safety and Environment Management) and the significant change prompted by the publication and planned adoption by DNSR of NII Safety Assessment Principles (SAPs). A preface and interpretation has been developed to enable application of the NII SAPs, without addition, to the NNPP, and a more significant body of work has started to provide additional SAPs attuned to the particular needs of the NWP by reworking NW Safety Principle and Safety Criteria. The development of regulatory practice since the previous editions of the JSPs, and its understanding and acceptance by the regulated community, means that regulatory requirements can be simplified and reduced. The overall result should be slimmer JSPs better fit for purpose; the aim is to publish them in mid 2008.

38. DNSR's visibility of the Future Submarine Project (the SSBN replacement) has improved during 2007. Technical engagement in [redacted].

PRIORITIES FOR 2008

39. I consider that in 2008 those responsible for implementing the nuclear programmes should respond to all the key issues identified earlier in this report. In a year likely to be dominated by intense resource pressure, both finance and people, with several associated organisational change initiatives, the key themes of this are:

a. To analyse robustly the essential skills and resource required to deliver the nuclear programmes safely, maintain a sustainable cadre of skills, and apply the established processes for control of organisational change before it is implemented (Issues 1 & 6);

b. To continue the welcome initiatives to address and improve the corporate safety culture, and control of work, learning from experience and sharing this across all sites and organisations (Issue 2);

c. To expedite the implementation of the essential supporting activities of objective safety performance measurement (Issue 4), safety case improvement (Issue 3) and appropriate commercial strategy (Issue 2).

40. In 2008, in addition to routine regulatory activity, DNSR should:

a. Apply resource to encourage the improvement of co-operation arrangements between authorisees and with approving authorities in both programmes;

b. Seek to accredit the NW ADA thus completing the formal regulatory framework of the NWP;

c. Publish updated issues of JSPs 518 and 538;

d. Improve joint regulatory practice with fellow MoD regulators;

e. Influence the new programmes, particularly in the concept and assessment phases.

Signed by

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Chairman Defence Nuclear Environment and Safety Board