DEFENCE NUCLEAR ENVIRONMENT AND SAFETY BOARD

2009 ASSURANCE REPORT[1]

OVERVIEW

1. My assurance report from the Defence Nuclear Environment and Safety Board (DNESB) covers the calendar year 2009. The DNESB oversees nuclear and radiological safety and environmental protection in the defence nuclear programmes. This report presents a summary compilation of assurance gathered principally by the independent Defence Nuclear Safety Regulator (DNSR) together with comment provided by relevant statutory regulators: the Health and Safety Executive's (HSE's) Nuclear Installations Inspectorate (NII), the Environment Agency (EA) and the Scottish Environment Protection Agency (SEPA); its conclusions have been noted by implementers brigaded under Director Submarines (DSM), Chief of Materiel (Fleet) (CoM(F)) and Navy Command (NC).

2. Looking ahead, I consider that ***sufficiency of resources***, both money and staff complement, and the maintenance of a sustainable cadre of ***suitably competent staff*** (Royal Navy, MOD civilians and in industry partners) to be the principal threats to safety in the defence nuclear programmes in the medium term.

ASSURANCE ASSESSMENT

3. DNSR (with input from statutory colleagues) has assessed that those responsible for the Defence Nuclear Programmes (DNP) have maintained an acceptable 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 good practice is sound in many aspects of the DNP, but continues to need improvement in others. Whilst there have been initiatives that prospectively resolve some long-standing Issues (eg. in relation to staff), 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. Shortly before this Annual Report was compiled, the report of the Nimrod Review team, led by Mr Haddon-Cave QC, was published. A preliminary comparison of nuclear and radiological safety in the DNP with the more general Haddon-Cave recommendations suggests that there are a number of lessons to be learned, but equally that arrangements are generally aligned with the practice advocated. The nuclear community will participate actively in the work being taken forward. Specific issues are addressed later in this report.

5. On the basis of the assurance provided and through 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 DNP. Behaviours are generally appropriate, and are 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 Policy Statement on Safety, Health and Environmental Protection and which the Department should therefore regard as potentially significant risks to its programmes. I judge that a rating of ***substantial assurance*** can be provided.

[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).

ISSUES & RISKS

6. Progress has been made in addressing all the key Issues presented in the 2008 Report, most of which are challenging and long term issues. One Issue from last year no longer appears[2]; it is being managed as normal business. The eight that remain have been updated to reflect the progress that has been achieved or the way the Issue has migrated; the risk rating has been adjusted accordingly. One new Issue has been introduced.

7. The nine *Issues* are presented in the table below, in which *Regulatory Risk* is to be interpreted as the risk to:

a. Protection of the workforce, the public and the environment; or
b. Compliance with SofS's Policy Statement in respect of relevant legislation, government policy or MOD requirements (as expressed in JSPs); or
c. The demonstrability of such compliance.

Current Status describes the likelihood of regulatory action prior to the *Suggested Strategies and Controls* being implemented. A red (high) *Current Status* suggests that significant action might be necessary within a year; amber and green risks have commensurately longer realisation periods. Arrows indicate whether the *Current Status* is assessed to be improving ↑, degrading ↓ or remaining steady →. The level described by the *Current Status* is a judgement of significance within the DNP; no attempt has been made to calibrate this against the levels of risk in other safety environments.

8. **Individually, none of the Issues reflect an immediate safety or environmental concern**[3]; they all represent a potential compromise to compliance or the demonstrability of compliance or associated processes. Taken together they pose the risk that it will become increasingly difficult to maintain that the defence nuclear programmes are being managed with due regard for the protection of the workforce, the public and the environment.

Issue	Regulatory Risk	Suggested Strategies & Controls	Owners & Managers	Current Status
1. **Adequacy of Resource** *2008 Issue No 1 updated.* Lack of adequate resource to deliver (and regulate) the defence nuclear programmes safely. (Para 10-13)	Risk to compliance with MOD policy (JSP815) and JSPs 518 & 538.	a. Identify organisational baselines and essential level of resource required to fulfil safety responsibilities, using best practice and guidance. b. Compare with existing level of resource and where necessary seek appropriate additional resource.	DSM, CoM(F) & NC Managers - Authorisees	 →

[2] Explanation for its removal is provided in the commentary below.
[3] In general in this report the term "safety ..." can be taken to include matters affecting the environment since the measures to achieve protection of both are often similar.

Issue	Regulatory Risk	Suggested Strategies & Controls	Owners & Managers	Current Status
2. **People** *2008 Issue No 2 updated.* Measures already in hand may be insufficient to address the present and predicted shortage of NSQEP in the Navy, among MOD civilians and in defence contractors. (Para 14-17)	Risk to the protection of the workforce & to compliance with JSPs 518 & 538.	a. Continue to implement present initiatives. b. Give wider visibility to the DNP HR Study and act quickly on its recommendations.	DSM, CoM(F) & NC Managers – DSM & NC	R →
3. **Front Line Responsibilities.** *New Issue* Navy Command is in control of submarines "at sea" but is not the authorisee. (Para 18)	Risk to demonstrable compliance with legislation and Defence Policy	a. Investigate migration of the authorisation for submarines "at sea" to NC from CSSE (weapons) and NP (propulsion).	NC Managers – NC, NP-Hd, CSSE	G
4. **Safety Case Improvement and ALARP Demonstration** *2008 Issue No 4 updated.* The development of safety analyses for the plant and weapon by Approving Authorities and the use of these analyses by Authorisees in their safety cases is inconsistent. (Para 19-21)	Risk to demonstrable compliance with legislation.	a. Continue the development of reactor and weapon safety analyses. b. Integrate these analyses into facility activity safety cases. b. Use these safety cases to demonstrate ALARP.	DSM & CoM(F) Managers – Authorisees & Approving Authorities	A →
5. **Performance measurement** *2008 Issue No 5 updated.* Objective performance measurement needs to be developed in accordance with national practice (Para 22)	Risk to compliance with government policy	Conclude development of safety performance indicators and provide data.	DSM, CoM(F) & NC Managers – Authorisees & Approving Authorities	G →
6. **Control of Work** *2008 Issue No 6 updated* Potentially helpful initiatives have been introduced to address root causes in this area but the number of events remains too high. (Para 23)	Risk to the workforce and public safety and to the environment, in both short and medium term.	a. Maintain current momentum in identifying and implementing best practice at all sites. b. Continue the momentum in addressing safety culture.	DSM, CoM(F) & NC Managers - Authorisees	A ↑
7. **Co-operation** *2008 Issue No 7 updated.* Co-operation between Authorisees and between Authorisees and Approving Authorities needs to be improved & formalised. (Para 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.	DSM, CoM(F) & NC Managers – Authorisees & Approving Authorities	G ↑

Issue	Regulatory Risk	Suggested Strategies & Controls	Owners & Managers	Current Status
8. **Decommissioning & Disposal.** *2008 Issue No 8 updated.* Funding has not been allocated to achieve the developing Decommissioning & Disposal Strategy. (Para 25)	Risk to meeting government policy.	a. Allocate funding to meet the decommissioning liabilities declared in the MOD accounts. b. Continue the development of the Decommissioning & Disposal Strategy.	DSM Manager – DSM/STL	A ↑
9. **Future SSBN.** *2008 Issue No 9 updated.* The need for a strong focus during the concept phase on demonstrating that risk can be reduced so far as is reasonably practicable. (Para 26)	Risk to meeting legal requirements.	Use federated safety case to inform the development of the concept and in due course the design.	DSM Manager – FSM-Hd & Approving Authority	A →

PROGRESS & SUCCESSES

9. In 2009, those responsible for implementing the nuclear programmes have:

   a. maintained Continuous At Sea Deterrence (CASD) despite increasing pressures on manpower [redacted];

   b. safely delivered the required (albeit reduced) military capability from the Submarine Arm despite reduced platform availability;

   c. safely maintained the required operational outputs of the nuclear weapons programme;

   d. safely conducted power range testing and commissioning of ASTUTE;

   e. initiated Re-entry System (Options) work;

   f. achieved accreditation of the Nuclear Weapon Approving and Design Authorities.

ISSUES AND COMMENTARY

10. **Adequacy of Resource.** The risk resulting from inadequate resource in the DNP has been closely monitored since it became a significant Issue last year. Resource, in this context, is primarily the number of funded posts in internal MOD organisations (including the regulator), but it also applies to the level of contract funding that delivers safe operations or designs and in issues such as the holding of safety related spares. The risk is that insufficient resources undermine the timely provision and analysis of evidence to support safety clearances in support of the submarine programme; readiness and availability may be lost as a result. The public sector and defence environment has been particularly challenging, and this has been reflected into both in-year and forward programme pressures including the forthcoming defence Green Paper (to be followed by a Defence Review) and the DE&S's strategic re-balancing exercise and recruitment control regime. It appears, thus far, that the deterrent programme has been relatively immune

from the most significant effects of these measures, but that does not apply across the DNP (for example NRPA lacks posts in its technical governance and safety assurance areas), nor will the effects be fully comprehended until the turn of the next financial year.

11. Last year, in broadening this Issue from its previous title "Control of Organisational Change (and Funding)", the encouraging progress in the use of control of change processes was noted; the changes thus made have proved successful (eg. the formation of the Strategic Weapons Project Team). These processes have been further tested by changes predominantly in industry during 2009 (eg. major re-organisation at AWE) and have been generally satisfactory. By comparison with recent years, there has been welcome stability in the nuclear programmes' organisation at and above authorisee level, with a settling out of business processes in which safety has been given appropriate attention. However, there is less confidence that robust processes exist more widely (eg. in DE&S senior echelons) to control changes that may have significant but longer-term effects on the ability of nuclear operators to manage safely. In responding to the Nimrod Review (Haddon-Cave), developments in organisation will need to be tested in accordance with the Secretary of State's policy on control of change.

12. It was noted last year that robust organisational baselines (which adequately justify the resource available to deliver safely) do not exist universally in the defence nuclear programmes. DNSR and NII have participated in and observed the development, sponsored by the Safety Directors' Forum, of a Nuclear Industry Code of Practice (NICoP) provisionally titled *Defining, Building and Maintaining the Capability to Deliver Nuclear Safety*. Defence licensees and authorisees have been encouragingly pro-active in the work which, when completed next spring, should provide a thorough but practical guide to the derivation and justification of baselines and the management of changes to them. This is overdue, but worth waiting for; authorisees should be positioning themselves to respond rapidly to the publication of the NICoP in order to justify baseline organisation and resources.

13. The judgement last year was that some areas were barely resourced to deliver their outputs (including safety) with a considerable load on a small number of key individuals. Whilst it was considered then that availability might be traded to "remain safe" (see also para 15), the current view is that the space to do this is now eroded with the resilience of the submarine enterprise under threat and even the ability to recognise this at risk. For these reasons and because of the widely recognised overheat of the defence budget (notwithstanding initial protection for nuclear programmes) and problems for public sector funding caused by the financial crisis, the status of this Issue has been raised to Red.
(Issue No 1 continues)

14. **People.** Whilst a justified organisational baseline is a necessary (but recently recognised) element of nuclear safety capability, the ability to populate an organisation with adequate numbers of competent people has long been a matter of concern in these reports and elsewhere[4]. The DNP Human Resources Study, an initiative welcomed in the last report, has concluded and its recommendations have been endorsed by the Defence Board. However, its impact within the community has been muted as the report has not been released and so the full extent of its recommendations cannot be judged, notwithstanding that some workstreams have already commenced. By contrast, programmes to deliver new nuclear power generation and to change the status of statutory regulators are moving forward and have the potential to make the employment market more challenging. The continuing effects in the constituent employment pools of

[4] For example all recent annual Recommendations from DNSC and in the DNEB's risk register.

the Royal Navy, MOD civilians and the defence nuclear industry are addressed separately below. The point of concern is the shortfall in numbers of suitably qualified and experienced personnel (SQEP) in the current (loosely justified – see above) organisations. It should be understood that the regulators do not in general have concerns about the competence of the people who are employed in the organisations; there are satisfactory arrangements in place to ensure that this gets adequate attention.

15. It was noted last year that the need for regulatory action (seen as likely due to the red risk-rating) would be averted by dutyholders taking action to delay or cancel activities, rather than seeking regulatory agreement to proceed with insufficient people. This is what has happened in effect in NC, although the programme effects (ie. SSN readiness profile) have been exacerbated by poor equipment availability[5]. There is a 7% shortfall in MESM complement, with all senior rates on minimum time ashore. Careful management is now required to ensure that future competence is not compromised as the lack of time on task (at sea) reduces the time to acquire necessary experience.

16. The under-bearing in MOD civilian NSQEP posts has stabilised at 14% (as for 2008, having been 10% in 2007): this is partially due to an increasing requirement. The programmes initiated in recent years to recruit and train graduates and (advanced modern) apprentices are bearing fruit (with encouraging quality of graduates), but it will take many years to provide the numbers at the management levels that are most under threat. New flexibilities in personnel management (ie. the post-rotation system) are helping to ensure that key posts are not gapped for too long and that career development can be better addressed, but this can only be a matter of "moving the holes around". A new career management group for the NSQEP community has been created (a welcome and rapid response to the DNP HR Study); it will need to focus quickly on improvements to the measurement and reward of functional competence.

17. In recent years defence contractors have generally had less difficulty than MOD in recruiting and retaining high quality staff, not least because of greater flexibility in terms and conditions. Funding constraints (for example in the second phase contract with AWE let earlier this year) may begin to affect this position, and it is evident (see para 19 below) that industry still has to divert effort in meeting priorities with unwelcome impact in other areas.
(Issue No 2 continues)

18. **Front Line Responsibilities.** In the context of organisational baselines, last year's report noted the potential opportunity to correct an organisational flaw in the framework for regulation of the defence nuclear programmes. NC has done further work to strengthen its role as the submarines' (and ships) Operating Authority in accordance with JSP430. In so doing, the inconsistency between this primary role for submarine safety and the secondary role of NC as duty holder for nuclear safety has become yet more apparent. The organisational flaw has been in the nomination of the Naval Reactor Plant Authorisee (NRPA) and CSSE as authorisees (propulsion and weapons respectively), which is inconsistent with the characterisation of an authorisee as the operator in day-to-day control of activities (cf. JSPs 518 & 538), which NC and the submarines' crews clearly are. This year the Nimrod Review report has provided further emphasis[6] on the responsibility of the Front Line Command for the safety of its activities. The nuclear programmes should now investigate the migration of the authorisation for submarines outside of authorised

[5] Notably caused this year by repairs to swept branch fittings
[6] This is entirely consistent with the recommendations of the Safety Improvement Working Group transferred into the DESB's action plan.

sites (which would include operational berths) to NC. Additional benefits in so doing would be to provide an opportunity for NRPA to focus clearly on its vitally important role as Approving Authority for naval reactor plant and to reduce complexity in the maintenance of authorisation compliance. NC accepts the logic of this direction to which it will turn resources when confident that 1SL's submarine safety argument is fully established. This must be done in an ordered fashion adhering to the disciplines of organisational change; it may be appropriate to migrate authorisation for weapons first, transferring and adapting CSSE's arrangements, whilst bearing in mind the need to integrate propulsion issues subsequently. Amendments to the JSPs and inspection of the new arrangements by DNSR will be required in parallel. This is being articulated as an Issue for the first time to enable the DNESB to track progress as it is investigated; whilst it is an issue of a fundamental nature, a risk rating of Green reflects the time to complete the necessary work and the fact that current (non-optimum) arrangements have been made to work. (Issue No 3 new)

19. **Safety Case Improvement and ALARP Demonstration**. Steady progress in this area, with significant benefits in improved demonstrability of safety remaining in the future, was noted last year; the current view is that momentum has been lost and the risk rating has been adjusted accordingly. Development of the [redacted] for naval reactor plant has run behind schedule as resources have been diverted to design work for the next generation nuclear power plant (NGNPP) for the Future SSBN (FSM). As a result, programmes for safety case improvements at the sites (eg. the Devonport Naval Base Periodic Review of Safety), which depend on vital outputs from the analysis, are subject to less than ideal work-arounds to maintain momentum. The safety analysis for nuclear weapon activities at Coulport, concluded last year, is being integrated into the relevant facility safety case. However, a significant finding from the accreditation inspection of the Nuclear Weapon (NW) Approving & Design Authorities was that this analysis needed further work to bring it up to best practice and extend its application to other phases of the NW life-cycle. Design Authorities in both propulsion and weapons programmes have essential work to do in relation to the safety analysis of the items they supply[7] and the relevant project teams (Approving Authorities) must ensure that this work is correctly prioritised and resourced.

20. There has been evidence this year that the key requirement of UK safety law, that a duty-holder shall reduce the risk of an activity so far as is reasonably practical[8] (SFAIRP, aka ALARP), is not correctly understood widely through the Department. In defence activities of much complexity, risk may result from different characteristics (eg. the sinking of a submarine, explosive potential of munitions, radiation from the use of radioactive materials) and present itself to the workforce (including crew), possibly also to the public and possibly to the environment[9]. Risk must be reduced SFAIRP from all characteristics and to all recipients. The case to be made might therefore be complex and involve trading between characteristics and recipients; sound arguments must be provided, firmly based on the engineering of the equipment and the capabilities of the operators.

21. Demonstration that risks can be reduced SFAIRP is a major consideration when conducting periodic review of safety especially for plant and facilities nearing end of life. Extensions to life may be justified (as ALARP) if there is a clear and funded programme for replacement where the requirement for the capability will continue: an approach found acceptable (for example) for facilities at AWE Burghfield. (Issue No 4 continues)

[7] Health and Safety at Work etc. Act 1974 Section 6
[8] Health and Safety at Work etc. Act 1974 Section 2
[9] Environmental legislation calls for a subtly different approach which is broad equivalent to ALARP

22. **Performance Measurement.** The use of safety performance indicators (SPI) has moved forward considerably in the arrangements of defence licensees and naval base authorisees. It has been encouraging to see indicators become part of the reporting to main boards; even before there is complete confidence in the absolute values, trend data is proving valuable. Regulators are receiving data regularly and are considering how to use it in conjunction with other information in developing intervention strategies. This Issue, however, remains in the report because it has proved much more difficult to engage authorisees whose business is rather different to that of running a site with nuclear facilities (eg. nuclear transport) in developing a set of SPIs.
(Issue No 5 continues)

23. **Control of Work.** This Issue has featured (at Amber risk) in several Annual Reports; it retains that rating because behaviours are still variable across the DNP, but the risk is now seen to be declining. Initiatives to improve safety culture are a continuing feature in a number of areas: Target Zero and the count of "perfect days" at AWE; the Incident & Injury Free initiative at Clyde and equivalent at Devonport. Experience is that such campaigns need regular reinvigoration to maintain their "bite", and their typical focus on conventional safety needs to extend into process safety during higher hazard activities. At Barrow there were difficulties in concluding work on ASTUTE (but lessons have been applied into a better performance on AMBUSH) and there have been spillages of primary coolant in submarines. The number of incidents reports (notably in the propulsion programme) that indicate a failure to follow procedures has not declined.
(Issue No 6 continues)

24. **Co-operation.** There has been some encouraging progress observed in co-operation between authorisees/licensees across geographical boundaries and between individual authorisees and relevant approving authorities (incorporating design authorities). In some instances this is well documented, in others it depends, less satisfactorily, on goodwill between individuals who know each other well. The A2A Management Arrangements for the propulsion programme have not progressed during the year, although there are improved relationships and good mutual assurance (for example) between NRPA and Babcock Marine. Perhaps unsurprisingly, relationships and documented arrangements in respect of FSM have still to develop.
(Issue No 7 continues)

25. **Decommissioning and Disposal.** The most visible evidence of the decommissioning and disposal requirement from the DNP remains the 15 laid-up submarines at Devonport and Rosyth, but due care is being given to their condition. Ten strategic principles have been agreed by the Secretary of State to form the basis for DSM's wider Decommissioning and Disposal Strategy; further ministerial submissions will be required. A Strategic Environment Assessment of the submarine disposal programme is to be completed. The direction of all this work has the confidence of the regulatory community, albeit that it will take a long time to complete. The key challenge remains the allocation and defence of the funding necessary to meet the liabilities; the risk rating will continue at Amber until this is achieved.
(Issue No 8 continues)

26. **Future SSBN**. There has been a delay in the Initial Gate submission for the Future SSBN caused, not least, as the evidence for the [redacted] is assembled and debated. The development of a safety framework and federated safety analysis addressing all hazards (notably the relationship between nuclear safety and submarine safety) has been particularly beneficial, though progress in populating the required technical knowledge base has been slower than expected. DNSR, working

jointly with relevant naval authorities and statutory regulators, has been firmly engaged with the duty-holders and the scrutiny community. The critical issue is the judgement about which [redacted]. Safety responsibilities, coherent with those for the rest of the submarine flotilla, have been agreed and are being documented to inform the project through life. Regulatory agreement enabling transition to the design phase has yet to be granted; it will be informed by a review of the preliminary safety reports for the propulsion plant and the submarine platform, and a safety strategy paper for facilities at Clyde.
(Issue No 9 continues)

27. **Re-entry System (Options).** Options are now being considered by SWPT and AWE for the maintenance of nuclear warhead capability for current and future SSBNs. When variability of ISD for any successor warhead is factored in, a quite complex picture emerges in which continuing research and development of warhead technologies and features is a central theme. DNSR has good visibility of and engagement with the ReS(O) programme.

28. **ASTUTE Class**. Following active commissioning (including power range testing) ASTUTE has now departed Barrow for her home base of Clyde where outstanding nuclear defects will be addressed prior to further seas trials.

29. **Contracting Strategy.** The adoption of appropriate commercial strategies in influencing appropriate safety behaviour and performance has been a theme of recent reports. Progress has been sufficient that this no longer ranks as an Issue; examples of good practice include the LOP(R) contract for HMS VIGILANT and the working relationship between HMNBs Clyde and Devonport with Babcock Marine. DNSR will continue to observe contracting practice, seeking assurance in particular that MOD branches are maintaining an intelligent customer capability within the baseline of their organisations (para 12 is relevant).
(2008 Issue No 3 closed)

30. **Transport Packages**. The impact of DNSR's appointment as the Competent Authority for radioactive material transport packages in the DNP has been more evident this year (see also para 36c). Duty-holders at Rolls Royce and in AWE have responded positively in improving the evidence required in meeting the IAEA regulations for the more significant packages. Approval has been given for a number of packages including the [redacted] and the Trident warhead container system. The programme for such approvals peaked in 2009, and work is underway to provide a better balanced workload in future.

31. **Emergency Response.** Supported by DNSR's assessments, the NII has reviewed the HIRE and determined a revised detailed emergency planning around submarine berths of 1.5km (reduced from 2km) covering both potential gamma shine and airborne release. This information has been carefully provided to relevant local authorities and work is underway (well-supported by MOD) to revise their off-site plans. As expected, FoI requests have been received from pressure groups wanting to understand the rationale behind these changes.

32. 17 nuclear accident response demonstration exercises were conducted in 2009 including two Grade A exercises (SHORT SERMON at Clyde & SENATOR (air crash with special nuclear material)) within a month of each other. Resource constraints in both defence and civil organisations have meant that Grade A exercises now last no more than

a day and cannot, as a consequence, demonstrate the sustained response that would be required in the scenarios exercised; further erosion will need to be resisted. Notwithstanding some specific difficulties, emergency response has been demonstrated as being generally maintained at an acceptable level.

REGULATORY ACTIVITY

33. **Organisation and resources.** DNSR is hosted in the DE&S TLB within the Director Safety & Engineering operating centre. An internal business agreement securing DNSR's resources has been produced and endorsed by the Chairman DNESB and DS&E. This underpins DNSR's independence, establishing me, on behalf of 2nd PUS, as DNSR's single customer (and source of delegated regulatory authority). DNSR's professional strength remains at 20 posts: the Head of DNSR and five inspectors' posts changed incumbent during the year with one further long-term gap currently being carried. Training and development remain a significant commitment; the second DNSR Inspectors' Course was delivered. This level of churn would appear to be about the norm, and I judge that arrangements are in place to maintain the necessary level of competence through such changes. The essential contracted support from Serco RSD and DSTL has been maintained. It was noted last year that the reality of cost inflation in the nuclear industry, being greater than that provided for in consecutive financial allocations, had resulted in a progressive reduction in RSD capability. A measure to redress this position has been run in PR10, and appears at the time of writing, to have been successful.

34. Given expanding defence nuclear programmes, PR10 measures have also been run to increase DNSR's professional strength (by 3 posts) with a commensurate increase in RSD funding; these resources will be directed towards the approving authorities for reactor and weapon (where DNSR is the sole regulator) to influence particularly the early stages of new programmes. Again at the time of writing, these measures appear to have been successful, thus achieving a satisfactory response to one of last year's priorities.

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

a. permissioned 28 (cf. 20 in 2008) significant nuclear activities;

b. reviewed at least 200 (103) documented safety submissions;

c. conducted 73 (113) planned inspections (many jointly with NII) and 9 (11) reactive inspections and investigations in response to unplanned events;

d. assessed 17 (17) emergency response exercises including SHORT SERMON and SENATOR and 2 (3) re-demonstrations;

e. approved, as Competent Authority, 5 (n/a) packages for the transport of defence nuclear materials;

f. one Safety Improvement Notice remains outstanding from 2006 (in respect of the air transport of highly enriched uranium loads).

36. **Joint Regulation.** The tiered structure of regulatory interface meetings has continued with an encouraging reduction in their frequency as all parties understand better what is required. The practice of joint regulation has been further developed during 2009. In particular:

a. integrated and joint (with NII) intervention strategies and plans for the defence licensed sites have been developed further;

b. in conjunction with statutory colleagues and led by the sector skills council (COGENT) a National Occupational Standard for nuclear regulation has been developed and approved; DNSR will use this to conduct a training needs analysis;

c. DNSR's development as the defence Competent Authority for transport packages has successfully concluded, and the LoU with the Department for Transport (DfT – see also para 37 below) will be amended to reflect continued sharing of information and good practice;

d. the cooperation between DNSR and relevant Naval Authorities resulted in a significant note in respect of safety judgements for the future submarine;

e. DNSR welcomes the decision to develop defence nuclear security regulation by enhancing the Head of Defence Security's role and anticipates this easing the dialogue already begun on the interplay between safety and security.

37. **Office of Nuclear Regulation.** This is the title for the new organisation that will comprise the current Nuclear Directorate of HSE (NII & the Office of Civil Nuclear Security & Safeguards) along with the Radioactive Materials Transport division from DfT. Head of DNSR has been leading the Department's interaction with the Legislative Reform Order and other changes that will bring this into being through routine interactions and as the MoD representative on the Transition Oversight Committee. It is not expected to have immediate impact on working relationships, and there will be future benefits to be explored. Vesting day for the new organisation is expected to be in July 2010.

38. **Legislation and Regulatory Policy.** My remit to identify emerging legislation and standards relevant to the DNESB's domain is discharged through the collaboration between SSDC and DNSR in the Radiation Protection Policy Development Committee (which is attended by DSM staff). There is a need to ensure that the established mechanism is sustainable and continues to have the appropriate influence on future legislation, given the high volume of (relatively routine) changes to UN and EU standards and directives and to UK legislation and departmental guidance. An agreement between MOD and SEPA, somewhat long in gestation, should be concluded in 2010.

39. DNSR Technical Assessment Guides (TAG) 001 (Emergency Arrangements) and 002 (Operational Berths) have been published and a programme established for the development of a number of others. DNSR continues to assist in the NII's TAG revision programme.

PRIORITIES FOR 2010

40. I consider that in 2010 those responsible for implementing the nuclear programmes should respond to all the Issues identified earlier in this report. In a further year of uncertainty (including a Defence Review), the keys to this will be:

a. to formulate robust organisational baselines to justify (and thus defend) the resources required to deliver the DNP safely; to give wider visibility to and act on the recommendations of the DNP HR Study (Issues 1 & 2);

b. to continue to develop safety analyses for reactor and weapon which can inform activity safety cases and improve the demonstrability that risk is ALARP, for both current and future programmes (Issue 4);

c. to pursue funding allocation to deliver against the developing Decommissioning and Disposal Strategy (Issue 8);

d. to demonstrate that the choice of reactor design for FSM meets good practice and is ALARP (Issue 9).

41. In 2010, in addition to routine regulatory activity, DNSR should:

a. encourage the development of SPIs for those authorisees who have not yet done so;

b. continue to influence the FSM & ReS(O) programmes given the potential benefit from making good safety decisions in the early stages;

c. recruit to the revised manpower control totals;

d. work with SSDC to ensure the sustainability of the mechanism to influence forthcoming legislation and standards;

e. improve transparency by publishing more material about its activities.

Signed by

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