



MINISTRY OF DEFENCE

# DEFENCE NUCLEAR SAFETY REGULATOR

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## **OPERATIONAL BERTH SAFETY STATEMENTS – DNSR REVIEW**

Reference:

- A. FLEET/252/008 dated 30 Jan 08.
- B. Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR) 2001.
- C. 2007DIN06-122 – Nuclear Safety regulation of Nuclear Powered Warship Berths

1. Safety Statements for UK Operational Berths were forwarded to DNSR by Navy Command at Reference A as part of the 2008 round of submissions by MoD operators I required by REPPIR (Reference B). These Berth Safety Statement (BSS) documents are required to fulfil three key functions:

- a. They should include the site-specific Hazard Identification and Risk Evaluation (HIRE) which, when taken with the generic NRP and NW HIREs, together should constitute an assessment sufficient to demonstrate that:
  - i. All hazards arising from the use of the berth by NPWs have been identified.
  - ii. The nature and magnitude of the risks to employees and other persons arising from those hazards have been evaluated (REPPIR Reg 4(1)).
- b. They should include a Report of Assessment (RoA) as required by REPPIR Reg 6(3).
- c. They should provide clear evidence of robust safety management arrangements and a summary safety justification for the use of the berth sufficient to demonstrate that the risks arising from such use are ALARP as required by Reference C.




2. The Safety Statements do indeed include a RoA (para 1b) and a set of AC compliance statements which part satisfy para 1c. In each case however the bulk of the document is presented very much as a collection of information in the previous berth assessment format rather than systematically identifying potential hazards (in particular the site-specific external hazards) and the corresponding mitigations, conditions and limits, consequences etc sufficient to address para 1a or to demonstrate that the risks arising are ALARP (para 1c). More specific comments are at Annex A.

3. DNSR recognises that Navy Command have work in hand to develop the BSS, most importantly in the provision of an enhanced hazard identification, during the development of the next set of documents to be submitted. There has also been progress in the development of an independent Review Process for future documents. The draft Safety Statement for Ramsden Dock which has recently been sighted by DNSR represents a substantial step forward in addressing at least part of the shortfall. However, NRPA/CSSE/Navy Command is requested to consider the issues presented at Annex A as part of their deliberations on how best to further develop the BSS in order to meet the various expectations of the document; ongoing engagement with DNSR is encouraged. In support of this, more detailed guidance on regulatory expectations has been provided, currently in draft form (eg draft Guidance to duty holders for JSP 518 and a draft TAG).

4. On the basis of the documentation received, DNSR considers that the Berth Safety Statements as submitted fulfil the REPPiR requirements but do not fully provide the level of safety substantiation expected. However, DNSR does not consider it appropriate to challenge the extant regulatory consent to use the UK Operational Berths; instead NRPA/CSSE/Navy Command should look to develop the BSS structure and content through the delivery of the current Operational berths Forward Action Plan which will be monitored through the Operational Berths Level 3 RIF. It is a regulatory expectation that the 2011 REPPiR Submissions will be supported by a significantly improved BSS.

Annex:

A. 2008 REPPiR Submissions for Operational Berths – Safety Statements – Detailed DNSR Comments

DNSR-ICF\*  
NP IPT (for BAM N1 and NP-SDM5)\*  
CSSE (OPS and OPS1)\*  
Navy Command (SWSPOL)\*  
HMNB Devonport (SHPP)\*  
HMNB Clyde (NEPO)\*  
HMNB Portsmouth (PMNuc)\*  
Dstl (  )\*



**2008 REPIR SUBMISSIONS FOR OPERATIONAL BERTHS – SAFETY STATEMENTS –  
DNSR COMMENTS**

**General comments**

1. The Safety Statements are presented very much as a collection of information in the old berth assessment format rather than in the form of a HIRE/summary safety case, systematically identifying potential hazards and corresponding mitigations, conditions and limits, consequences etc. Thus although the documents generally conclude that no hazard has been identified which challenges the conclusion of the NRP HIRE it is not clear that the analysis presented can sustain such a conclusion. Similarly, no case is made that risks are ALARP. A review of the structure and content is required in order to satisfy requirements.

2. On particular points:

a. There are difficulties in the descriptions of the control of commercial shipping as presented for Portsmouth, Southampton and B4. This should be addressed through the HAZID for future submissions.

b. While Portland visits are deconflicted with cruise liner visits (and use of the prison ship) this is not the case at Southampton despite worst case demographic comparator values apparently exceeding Devonport values (Table D1 case Ferry 4). (Such deconfliction is suggested at para D19 but no outcome is identified.)

c. There are inconsistencies in the presentation of Conditions and Limits in the different reports (differing amounts of detail on plant conditions, inconsistent reference to use by SSBNs, additional differences between the information in the classified and unclassified RoAs (Portland in particular)). DNSR accepts that, in time the delivery of the Shut Down Safety Case should provide a clear and consistent set of plant conditions and limits along with any specific conditions and limits demanded for support activities. DNSR expects to see these implemented as appropriate to the scope of activity at the berth as and when they become available.

d. While reference is made to the emergency arrangements, no reference is made to tests (exercises) of these arrangements in accordance with REPIR requirements. In a number of cases no test had been carried out for many years at least at the time of submission (Loch Goil, B4). In particular DNSR wishes to understand the high level testing philosophy and who is responsible for arranging the tests. This is particularly important where berths make claims against tests in other locations (eg Southampton and Portsmouth, HMNB Clyde and Loch Goil)

3. In a number of cases outdated population data (including the demographic comparator) is used, apparently based on previous submissions, 1991 census etc. In general, population data should now all be based on the 2001 census. Referencing is

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frequently not clear. It should also be made clear where there is a known population, possibly a transient one that does not reflect on census data. It is acknowledged that the planning process deals with these populations but the BSS should make clear that they exist.

4. Meteorological data is generally similarly outdated and unsystematic (see for example Loch Ewe Annex B). Referencing is frequently not clear. Although much detailed data is provided (as was required previously) the conclusions thereof are generally not apparent. It may be appropriate to assess meteorological hazards as part of the HAZID process so as to inform both safe operation and contingency planning and provide more targeted information.

5. Mapping is frequently not adequate to provide an appreciation of the surrounding area. Of particular interest are any geographic features that may impact upon safety management but will not show up on a very local map (eg travelling time to Loch Ewe, single road access to Portland).

6. There are numerous editorial errors and other shortfalls. For example:

a. There are frequent mis-matches between the detailed population data presented in the Annexes (Annexes A and D) and the summary data in the main body. There are also differences in the Devonport data presented in different reports, with data presented in different reports for variously 9 Dock and 5 Basin.

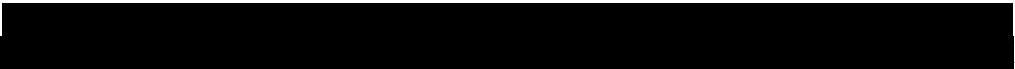
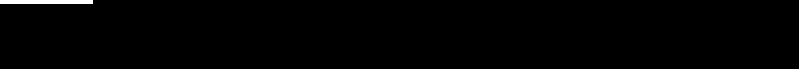
b. There are frequent references to Figures, Tables and references which have not been included – see for example Portsmouth para 14, A18, D15-D18. The latter exclusions result in the omission of demographic comparator data for Devonport in this case.

c. For the southern OBs (Portland, Portsmouth and Southampton), Annex B to the RoA (referring to T-class) mis-states the frequency for Accident 63 as 5E-6, ie a factor of 10 too high compared with the data in Addendum 1 to the plant HIRE. (With consequences to 1400m, this would be significant if accurate.)

d. The RoAs repeatedly refer to the Reference Accident having a probability of occurrence of less than 1E-5, which is not consistent with the plant HIRE (~1E-5 or not greater than 1E-5). Further, the unclassified RoAs for Portland and Southampton which are intended to be made publicly available refer to the Reference Accident having a probability of 1E-6. This is also stated in the classified RoA for Portland but not for Southampton.

### Detailed comments

7. A 36-day PUF limitation is stated in a number of Safety Statements but omitted in several others.

8.   






9. The discussion of fire hazards in particular at Southampton and Portsmouth is trivial and unsourced (Annex F). The conclusions presented in the Safety Statements for Southampton and Portsmouth are particularly weak.

