



**Office for Nuclear Regulation (ONR)
Quarterly Site Report for
Devonport Royal Dockyard
(Devonport Royal Dockyard Ltd and
HM Naval Base Devonport)**

Report for period 1 October to 31 December 2014

Foreword

This report is issued as part of ONR's commitment to make information about inspection and regulatory activities relating to the above sites available to the public. Reports are distributed quarterly to members for the Local Liaison Committee and are also available on the ONR website (<http://www.onr.org.uk/lc/>).

Site inspectors from ONR usually attend Devonport Local Liaison Committee meetings and will respond to any questions raised there. Any person wishing to inquire about matters covered by this report should contact ONR.

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1 INSPECTIONS

1.1 Dates of inspection

The ONR inspectors carried out inspections on the following dates during the quarter:

- 6 – 9 October 2014
- 27 – 28 October 2014
- 3 – 6 November 2014
- 1 – 4 December 2014

The Superintending Inspector for Naval Nuclear Propulsion Plant Inspection visited the site on the following dates during the quarter:

- 7 – 8 October 2014
- 27 - 28 November 2014

The Deputy Chief Inspector for the Defence Programme visited the site on the following dates during the quarter:

- 27 - 28 November 2014

Some of the inspections were carried out with inspectors from the Ministry of Defence's internal regulatory organisation, the Defence Nuclear Safety Regulator (DNSR) and the Environment Agency.

2 ROUTINE MATTERS

2.1 Inspections at Devonport Royal Dockyard Ltd (DRDL)

Inspections are undertaken as part of the process for monitoring compliance with:

- the conditions attached by ONR to the nuclear site licence granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
- the provisions of the Energy Act 2013;
- the Health and Safety at Work Act 1974 (HSWA74); and
- Regulations made under HSWA74, for example the Ionising Radiations Regulations 1999 (IRR99) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

The inspections entail monitoring licensee's actions on the site in relation to incidents, operations, maintenance, projects, modifications, safety case changes and any other matters that may affect safety. The licensee is required to make and implement adequate arrangements under the conditions attached to the licence in order to ensure legal compliance. Inspectors seek to judge both the adequacy of these arrangements and their implementation.

In this period, routine inspections of Devonport covered the following:

- examination, maintenance, inspection and testing;
- safety systems, structures and components;
- management of operations including control and supervision;
- staff training, qualifications and experience;
- new plant construction and commissioning;
- emergency preparedness;
- safety documentation and periodic review;
- incidents on the site;

- radiological protection;
- operating rules and instructions;
- modifications to plant, equipment and safety cases;
- radioactive waste management;
- quality assurance and records;
- organisational changes;
- decommissioning;
- control of property transactions;
- industrial safety and meeting safety representatives.

In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. Where improvements were considered necessary, the licensee made satisfactory commitments to address the issues, and the inspectors will monitor progress during future visits. If necessary, ONR will take formal regulatory enforcement action to ensure that appropriate remedial measures are implemented to reasonably practicable timescales.

2.1.1 Organisational Capability

Under the conditions of the nuclear site licence, DRDL is required to maintain adequate resources to ensure the safe operation of the site and also have arrangements to control any change to its organisational structure (under Licence Condition (LC) 36).

In this reporting period, DRDL has made progress in developing their understanding of what is needed to achieve sustained compliance with LC36. ONR continues its regular engagement with DRDL, monitoring progress against the objectives stated in DRDL's "Improved Nuclear Baseline" plan. This is DRDL's plan to have many of the arrangements necessary to derive and manage the organisational baseline in place for June 2015, along with the production of a baseline to demonstrate adequate organisational capability within a specific pilot area.

2.1.2 Examination, Inspection, Maintenance and Testing (EIMT)

ONR continues to engage with DRDL to seek further improvements to their arrangements for EIMT of structures, systems and components (SSC) important to safety. DRDL produced a strategy and plan for EIMT improvements that will address the areas identified by ONR. DRDL is integrating the EIMT aspects into the longer term Improvement Programme which is currently being developed from the improvement notice work across the Devonport site. ONR will continue to engage with DRDL with respect to the details of these improvements within the Improvement Programme.

2.1.3 Site Developments and Future Nuclear Facilities

ONR continues to engage on the project to provide a new defueling capability in the Submarine Refit Complex (SRC), known as 'Future Nuclear Facilities'. This will enable defueling of laid up submarines currently on the Devonport site, together with other submarines when they are taken out of service. The project includes a replacement Reactor Access House (RAH) for removing fuel from the reactor, an updated operational safety case and other safety improvements.

Assembly of the 14 Dock RAH is progressing off the DRDL licensed site within the Frigate Refit Complex at 5 Dock. ONR continues to engage with DRDL on the 14 Dock RAH project ensuring regulatory control through permissioning of the established hold points and through DRDL's compliance with its arrangements for the construction and installation of new plant (LC19) and modification to the design of plant during construction (LC20).

DRDL is carrying out a range of design and safety case activities for the 14 Dock RAH up to the next regulatory hold points, which take account of ONR's requirements for installation off the licensed site. DRDL is working to a programme set out in its Management Action Plan for the project to address all of these requirements. DRDL is progressing with the manufacture of equipment for the 14 Dock RAH and installation at Devonport. Based on inspections and the information provided at bi-monthly meetings, ONR and DNSR are confident that DRDL is implementing adequate arrangements for the 14 Dock RAH manufacture and installation. DRDL plans to carry out inactive commissioning of the tooling that will be used during defuelling in a test facility. ONR and DNSR are carrying out a joint assessment to inform ONR's decision to issue a Licence Instrument to permission the planned inactive commissioning.

2.1.4 Submarine Refit Complex (SRC) Safety Case

ONR previously granted permission under the new SRC safety case (PSC 220) solely for the purpose of a single docking in 15 Dock. This safety case delivered many benefits through the modern standards approach. However, ONR considers that there are further improvements still to be implemented and recommendations from assessments to be resolved before ONR permissions the next use of the safety case.

DRDL has submitted a Category A Change Request (CR) to implement the modern standards approach in 14 Dock, following the completion of a gap analysis against PSC 220 and the implementation in 15 Dock. The CR has been submitted to ONR requesting permission to conduct the next docking in 14 Dock. ONR is assessing the safety case documentation supporting the permission and a permissioning decision will be made during the next quarter.

Following an incident reported to ONR in June 2014, ONR conducted a joint follow-up intervention with DNSR in July 2014. This resulted in ONR writing to DRDL, seeking improvement in alarm management and response. DRDL have responded positively to ONR's findings and instigated an investigative review of alarm management.

In December 2014, ONR carried out a further intervention to examine progress being made against the improvement requirements recorded in its letter. DRDL demonstrated good progress in enhancing the facility's capability in quick identification and effective response to an abnormal condition, such as a dock flood or fire. In addition to this, ONR witnessed an adequate demonstration of the improved response arrangements to be taken in the event of a fire on board a submarine.

2.1.5 9 Dock Safety Case

ONR continues to monitor the development of the revised safety case for the forthcoming deep maintenance period of HMS Vanguard in the 9 Dock facility. DRDL believes that the option that has been chosen will deliver a new modern standards safety case and considers that it will provide the greatest safety benefits. DRDL has presented an overview of the case and ONR is planning a series of early engagement meetings to enable a strategy for assessing the case effectively to be developed by the regulator.

2.1.6 Emergency preparedness

Where there is a potential for off-site release of radioactivity within the UK that would require implementation of countermeasures, emergency planning areas are designated. ONR determines the area based on two principles:

- A technical assessment of the area likely to be affected by a radiation emergency as defined in the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR);
- An assessment of the practical and strategic implications of implementing countermeasures and aiding those members of the public who are likely to be affected by

a radiation emergency. This assessment involves consultation with local authorities and includes local demographic and geographical considerations.

ONR now uses the term REPPiR off-site Emergency Planning Area (EPA) to identify the area around a nuclear site where the local authority is required to have a plan for protecting the public in the event of an off-site emergency (Detailed Emergency Planning Zone (DEPZ) has previously been used to define different areas by different stakeholders). The size of the EPA differs site by site in the UK, with due consideration given to individual factors associated with each site.

Following the publication of ONR's revised principles for EPA determination in January 2014, ONR commenced revision of the off-site EPAs to defined maps. The Devonport EPA is currently in the process of being re-assessed by ONR. ONR has engaged with DRDL, HM Naval Base Devonport (HMNB(D)), DNSR, Plymouth City Council, and Cornwall County Council regarding the determination of the Devonport EPA and shared its initial proposals. ONR will continue to engage with the key stakeholders as the EPA determination process progresses.

2.1.7 Demonstration Emergency Exercise

During the period, ONR observed Joint Exercise 2014 (JEX14), which was the annual demonstration of the DRDL nuclear licensed site and HMNB(D) emergency arrangements as required under licence and authorisation condition 11. The demonstration was assessed by a joint regulatory team consisting of ONR and DNSR.

The exercise scenario was based around operations on a fictitious Trafalgar Class submarine located in 5 Basin. The exercise aim was to demonstrate and test the nuclear accident emergency arrangements in response to a Devonport site accident on the Devonport site during normal working hours. The objectives and success criteria for the exercise were agreed with ONR and DNSR prior to the test.

ONR and DNSR judged that overall the exercise provided an adequate standard of demonstration of the joint on-site emergency plan for the Devonport Site. However, it did reveal areas that require attention by DRDL and the Naval Base. These included shortfalls in the operation of the emergency monitoring vehicles that require consideration by DRDL and HMNB(D) before the next demonstration exercise.

2.1.8 Licence Compliance Inspection – LC07 Incidents on the Site

In conjunction with DNSR, ONR conducted a joint compliance inspection against DRDL arrangements made under LC07 Incidents on the site. ONR considers that DRDL's current procedural arrangements need improving and that the requirement to report incidents as required by site licence conditions is currently not being achieved. Therefore, ONR judged DRDL's LC07 compliance arrangements as being significantly below standard. However, ONR noted that DRDL recognise a number of the deficiencies within their LC07 arrangements and action is being taken as part of DRDL's wider Improvement Programme. ONR wrote to DRDL informing them of the inspection findings and what action is required in the short term. ONR intends to monitor DRDL's progress against its findings through DRDL's Improvement Programme until the required improvements have been achieved.

2.1.9 Radioactive Waste Management

ONR continues to hold regular quarterly meetings with DRDL and HM Naval Base Devonport to monitor progress with a suite of projects and ongoing work relevant to the management of radioactive wastes and decommissioning at Devonport. Good progress is being made to secure suitable disposal routes and minimise waste accumulation at the site.

2.2 Inspections at HM Naval Base Devonport

The majority of sites inspected by ONR are licensed under the Nuclear Installations Act 1965 (as amended). HM Naval Base Devonport is not a licensed site although it operates under Authorisation from the Defence Nuclear Safety Regulator (DNSR). The site is regulated by ONR through other legislation as noted below. This report summarises the inspection and regulatory activities associated with HM Naval Base Devonport, which are co-ordinated with inspections by DNSR. Inspections are undertaken as part of the process for monitoring compliance with:

- the Health and Safety at Work etc Act (HSWA) 1974; and
- Regulations made under the HSWA (for example the Ionising Radiations Regulations 1999, the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR) and the Management of Health and Safety at Work Regulations 1999).

2.3 Other work

ONR's Deputy Chief Inspector for the Defence Programme and Superintending Inspector for ONR's Propulsion sub programme visited the site on 27th and 28th November to attend a Level 1 Regulatory meeting with the DRDL senior management team and members of Babcock's Naval Marine Board.

3 NON-ROUTINE MATTERS

Licensees are required to have arrangements to respond to non-routine matters and events. ONR inspectors judge the adequacy of the licensee's response, including actions taken to implement any necessary improvements. Matters and events of particular note during the period were:

3.1.1 Improvement Notice

In December 2014 ONR served an Improvement Notice (IN) on DRDL following an investigation which highlighted shortfalls in the health and safety arrangements for working with ionising radiations at Devonport Royal Dockyard.

The IN follows an incident which resulted in an individual receiving a very small radioactive dose. Whilst the consequences of the incident were negligible, it is the duty holder's responsibility to make and implement arrangements in order to keep doses as low as reasonably practicable.

ONR has previously engaged with the licensee to facilitate safety improvements, however this IN requires DRDL to take further action to bring the arrangements up to an acceptable standard.

3.1.2 Incidents on the site

During this period DRDL notified ONR of five events which met the criteria for reporting under the INF1 process.

An event was reported to ONR in October 2014 where a fork lift vehicle which was transporting a load of hydraulic oil made an unauthorised access to 15 Dock West and set down its load on the dock side in contravention of a safety case limit and condition. DRDL removed the hydraulic oil from site in a controlled manner within approximately ten minutes of its set-down. DRDL also modified the SRC main gate access arrangements to ensure Dockside Manager Organisation oversight of all vehicles with a destination inside vehicle control zones. ONR followed up the event during a routine inspection visit and has confirmed that the temporary dockside barriers have been replaced and that improved permanent arrangements have been established.

In Oct 2014, the inadvertent operation of a valve on a sampling rig resulted in the loss of primary coolant from the reactor pressure vessel of a submarine in 9 Dock to the bilge of the reactor compartment. The reactor had been shut down for a long period before the incident and ONR confirmed that it had remained within the limits and conditions imposed by the safety case throughout the event. The amount of activity in the coolant was low and no one was contaminated during the event or subsequent clean-up activities. There was no loss of containment and the activity remained with the reactor compartment. DRDL immediately implemented additional work control arrangements and has carried out an investigation into the event to identify the actions required to prevent a recurrence during subsequent dockings. ONR will monitor the completion and effectiveness of these actions.

Also in October 2014, the Nuclear Evacuation Siren for the Devonport Site was tested at the wrong time. There was no nuclear incident on the site and the occurrence was due to the clock on the system not being reset at the end of British Summer Time. The siren did give the "all clear" sound at the end of the cycle as would happen in a normal test. The Duty Manager confirmed that a nuclear incident was not taking place on the site. The appropriate organisations were contacted and informed of the event. DRDL has initiated an investigation. Nuclear Safety was not adversely affected by the event.

DRDL reported an event to ONR in November 2014. A safety case condition requires that torpedo tubes are managed in a specific manner when a submarine is in dock, in order to support safety case claims with respect to submarine watertight integrity. DRDL found that the torpedo tube configuration contravened a Facility Identified Operating Instruction. This condition only challenges the safety case if coincident with an unintended dock flooding scenario, a very low probability event. The corrective action taken by the Licensee is considered by ONR to be appropriate, no immediate follow-up was deemed proportionate and progress will be monitored as part of routine regulatory business.

An event was reported to ONR in December 2014. The 12 monthly maintenance package for a dockside crane was not undertaken by within the maximum tolerance date. The package included examination, inspection, maintenance and testing for safety related structures, systems, and components (SSC) including safety systems. The maximum tolerance date for the maintenance was not prompted/ flagged by the maintenance database IT system and was identified by the questioning attitude of DRDL's Design Authority. Following a review, ONR considers that the Plant Manager took a conservative approach and removed the crane from service until the maintenance could be conducted. An independent investigation is underway regarding the discrepancy with the maintenance database IT system. ONR intend to follow up the event as part of normal regulatory business.

4 REGULATORY ACTIVITY

ONR inspectors, specialist inspectors and HSE inspectors may issue formal documents to ensure compliance with regulatory requirements. Under nuclear site licence conditions, ONR issues regulatory documents, which either permit an activity or require some form of action to be taken; these are usually collectively termed 'licence instruments' (LIs), but can take other forms. In addition, inspectors may issue enforcement notices to secure improvements to safety.

Table 1

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
17/12/14	Improvement Notice	I/2014/ONR/DMM/001	Contravention of MHSWR99

Reports detailing regulatory decisions can be found on the ONR website at <http://www.onr.org.uk/pars/>.

5 NEWS FROM ONR

Insight into ONR's work as an independent regulator of the nuclear industry can be found in ONR's Quarterly News. The online publication (<http://www.onr.org.uk/onr-quarterly-report.htm>) reports on the key themes and developments in each of ONR's regulatory programmes and provides an update about the ongoing changes at ONR. <http://www.onr.org.uk/index.htm>. For the latest news and updates from ONR visit the website and sign up for our ebulletin (<http://www.onr.org.uk/ebulletin/index.htm>).

AMENDED LICENCE CONDITIONS

Amendments have been made to the standard nuclear site licence conditions 1 and 3 as summarised below.

Licence Condition 1 (LC1, Interpretation) provides a set of definitions. ONR decided to amend the definition of "radioactive material" and "radioactive waste" to ensure they are consistent with ONR's regulatory requirements. The changes were necessary because other legislation, to which the Licence Conditions were linked, had amended the definitions.

Licence Condition 3 (LC3, Control of Property Transactions) requires the licensee to make and implement adequate arrangements to control property transactions on licensed nuclear sites. LC3 was prescriptive and required the licensee to obtain ONR permission ("consent") before it let, conveyed, assigned or transferred any part of the licensed site to a third party. It made no allowance for the nuclear safety significance of transactions. Changes in the nature of the nuclear industry, with an increasing presence of contractors or other third parties on licensed sites, have resulted in growing numbers of LC3 applications, many of which have little or no nuclear safety significance. This has imposed an unintended regulatory burden on licensees and is an inefficient use of ONR's specialist resource and time. The principal change is to require the licensee to make and implement adequate arrangements that control all property transactions affecting the site and include provision for the classification and management of all property transactions according to their safety significance and their impact on the licensee's control of the site.

ONR's licence condition handbook has been updated and is available via the ONR website at <http://www.onr.org.uk/silicon.pdf>

6 CONTACTS

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