

Quarterly site report for Dounreay

Report for period 01 July 2013 – 30 September 2013

Foreword

This report is issued as part of the Office for Nuclear Regulation's (ONR) commitment to make information about inspection and regulatory activities relating to the above site available to the public. Reports are distributed quarterly to members of the Dounreay Site Stakeholder Group (SSG) and are also available on the ONR website (www.hse.gov.uk/nuclear/llc).

Site inspectors from ONR usually attend Dounreay SSG meetings and will respond to any questions raised there by the members of the group. Any other person wishing to inquire about matters covered by this report should contact ONR.

© Crown copyright 2013

You may reuse this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view the licence visit www.nationalarchives.gov.uk/doc/open-government-licence/, write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email psi@nationalarchives.gsi.gov.uk.

Some images and illustrations may not be owned by the Crown so cannot be reproduced without permission of the copyright owner. Enquiries should be sent to copyright@hse.gsi.gov.uk.

For published documents, the electronic copy on the ONR website remains the most current publically available version and copying or printing renders this document uncontrolled.

1.5.1.1

1.5.1.1.1

1.5.1.1.1.1 ONR site and specialist inspectors made inspections on the following dates during the quarter:

8 to 12 July 2013

22 to 25 July 2013

29 July to 1 August 2013

12 to 15 August 2013

19 to 22 August 2013

17 to 19 September 2013

24 to 26 September 2013

1.5.1.2

1.5.1.2.1

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

- the conditions attached by HSE / ONR to the nuclear site licence granted under the Nuclear Installation Act 1965 (NIA65) (as amended);
- the Health and Safety at Work etc. 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).

1.5.1.2.1.2 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 which may affect safety. The licensees/operators are required to make and implement adequate arrangements under the conditions attached to the licence in order to ensure legal compliance. Inspections seek to judge both the adequacy of these arrangements and their implementation. In this period routine inspections of Dounreay covered the following:

- Management of operations
- Staff training, qualifications and experience
- Emergency preparedness
- Radiological protection
- Radioactive waste management
- Organisational capability
- Periodic review of safety

2.2 Management of operations including control and supervision

Inspection of Dounreay Cementation Plant (DCP)

- 4 ONR inspectors carried out an inspection of DCP to verify that plant and equipment defined in the safety case as necessary in the interests of nuclear safety is in working order and is properly maintained. Sample inspections of the facility and of operating instructions revealed no concerns. Maintenance was also sampled through checks of the maintenance system and of records, and again no concerns were raised. The inspection provided confidence that the DCP safety support systems are being adequately managed and maintained.

Inspection of Dounreay Intermediate Level Waste Store

- 5 This inspection covered licence conditions 24 (Operating Instructions), 27 (Safety Mechanisms, Devices and Circuits), 28 (Examination, Inspection, Maintenance and Testing), and 34 (Leakage and Escape). The inspector sampled operating and maintenance instructions and associated records related to the over-head travelling crane used to move waste drums in and out of the facility. The crane is designated as Key Safety Related Equipment as identified in the facility safety case. Also sampled were operating instructions and records relating to drum integrity inspections. The inspector concluded that there were adequate arrangements to protect the containment of the waste packages during movements and storage within the facility.

2.3 Staff training, qualifications and experience

- 6 ONR carried out an inspection of fuel storage facilities for compliance with a range of nuclear site licence conditions to verify that there was a clear link from the safety case through to limits and conditions, safety mechanisms and maintenance. DSRL readily demonstrated that maintenance tasks are recorded diligently confirming a good standard of maintenance management. The inspector questioned the demonstration of competence of an instrument mechanic who had carried out a particular maintenance task. Although there was a general understanding amongst DSRL staff that the mechanic was competent, DSRL could not provide evidence to underpin the view that the mechanic was suitably qualified and experienced for the given task. ONR will return to this matter in the future and will report on the outcome.

2.4 Emergency preparedness

- 7 ONR inspectors observed a Level 1 (that is, site based) emergency exercise to demonstrate compliance with nuclear safety and nuclear security regulatory requirements. This was the first time that a joint safety/security exercise had been undertaken at Dounreay.
- 8 The exercise was played with considerable enthusiasm and realism. There were several aspects of good practice and a number of declared objectives were met. However inspectors noted a number of areas for improvement, particularly in the area of command and control, and these have generated opportunities for DSRL to improve the way in which it manages events on site which might have both safety and security elements. ONR will write to DSRL conveying a summary of our observations.

2.5 Radiological protection

- 9 An ONR specialist inspector undertook an inspection for compliance with the Ionising Radiations Regulations (IRRs) and the High Activity Sealed Radioactive Sources and Orphan Sources (HASS) Regulations. The inspection focussed on Dounreay's arrangements for control of sealed radioactive sources. The inspection consisted of a discussion and overview regarding controls applied and records held, and plant inspections during which the specialist inspector visited a number of source stores and met staff appointed to manage sources. The site procedures and arrangements for the control of radioactive sources and the stores inspected were judged to be adequate in terms of being able to account for the presence of sources and maintaining them securely.

2.6 Radioactive waste management

Strategy for Remote Handled Intermediate Level Waste (RHILW)

- 10 ONR continued dialogue with DSRL and with SEPA on Dounreay's strategy for managing RHILW. This matter is of key significance for the site because it underpins much of the decommissioning and hazard reduction underway or planned. There remain uncertainties regarding the number and type of packages which will need to be managed. ONR noted a recent change to the strategy, namely to build a new ILW store. ONR and the Scottish Environment Protection Agency wrote jointly to DSRL seeking further discussions to present regulatory concerns and enable DSRL to further justify its strategy.

Inspection of Dounreay Cementation Plant (DCP)

- 11 ONR carried out an inspection of the storage arrangements for cemented intermediate level waste. The inspector noted that the store is close to full capacity. The inspector queried the arrangements for inspecting drums to check for leakage and escape of radioactive material. The inspector concluded that DSRL should adopt a systematic inspection regime. However it was noted that there was no evidence of package deterioration at the time. The data should also be accrued to support interim end-state proposals.

2.7 Organisational capability

- 12 ONR carried out a planned inspection of compliance with licence condition 36 (Organisational Capability) concentrating on DSRL's arrangements for managing organisational change. DSRL has undertaken a significant number of organisational changes recently and more are planned in the near future. ONR acknowledged that organisational change is inevitable as DSRL continues its work on hazard reduction and decommissioning. However the inspector questioned what the cumulative effect of these changes may have on safety. The number and scale of changes are of potential concern because they increase the risk of confused management chains causing errors and omissions which in turn could lead to an incident. ONR commented that the approach to managing organisational change is adequate. But the inspector added that ONR will discuss the matter with specialist inspectors and will return to the site to consider the matter in more detail.

2.8 Periodic safety review

- 13 ONR carried out an inspection for compliance with licence condition 15 (Periodic Review). LC15 requires DSRL to make and implement adequate arrangements for the periodic and systematic review and reassessment of safety cases; hence it ensures that facility safety cases are continually reviewed to make sure they are kept up to date. Previous inspections have considered the process for carrying out safety case preparation and review; this considered the management of implementation.
- 14 The inspector noted that safety cases are reviewed every year as part of the self-assurance process carried out by facility managers. However the principle means by which facility safety cases are considered and updated is via periodic safety review, usually on a ten-year cycle.
- 15 DSRL demonstrated that there is close oversight of safety case reviews. There is clear visibility of status to provide early warning of when reviews should start and when a safety case is due to expire. DSRL pointed out that safety cases do not become overdue, they are either revised and updated in time or a modification to extend the period of validity of a safety case is agreed. The latter is by exception: for example ONR is aware of the consideration and challenge by the Dounreay Nuclear Safety Committee (DNSC) of a proposal to extend the validity of the safety case for a safety-significant facility, delays having occurred mainly through resource difficulties. The general lack of experienced safety case specialists is a continuing concern for Dounreay and other sites.
- 16 The inspector added that it is essential that the quality of safety cases is not affected by timetabling demands and ONR looks to DSRL's internal processes to ensure that safety case quality is maintained. Evidence from the Safety Working Party and DNSC meeting minutes confirms that DSRL is indeed ensuring that safety case quality is being maintained. Overall the inspector was satisfied that DSRL continues to maintain firm control of the safety case periodic review.

\$%\$~&%) (!\$† # fi((† &'

19 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.

DSRL MD decision to stop operations

20 ONR was informed that, on 14 August 2013, the DSRL Managing Director (MD) had issued an instruction to stop, or not to start, all operation, maintenance and modification work on the most safety significant facilities (ie, Category 1 and 2 facilities) at Dounreay. DSRL's action was as a result of an ONR inspection in July which revealed that safety case limits and conditions in respect of a particular facility appeared not to be implemented either through inclusion in operating instructions. The inspector noted that his inspection sample was small and invited DSRL to undertake its own review to investigate whether the issue was more widespread: subsequent DSRL review confirmed that ONR's findings were in fact applicable across a number of Dounreay facilities.

21 DSRL launched a Level 3 investigation into how this situation occurred and recommend actions to prevent recurrence. Level 3 is the highest level of DSRL investigation.

22 ONR's initial response was to write a letter to DSRL to express concern. The letter asked that DSRL thoroughly investigates the circumstances surrounding these matters to identify shortfalls and appropriate corrective measures, and asked DSRL to furnish to ONR the results of the investigation and corrective measures taken or proposed.

23 Since then ONR has been informed that facilities have restarted operations and that the DSRL Level 3 investigation has been completed. ONR undertook a further inspection in September to consider the initial improvements made to the implementation of facility safety cases and the evidence to justify facility restart. The results of these examinations have concluded that, in general, the site has taken adequate corrective action to improve matters, although some issues remain to be resolved. Further confirmatory inspections will be undertaken in November 2013, and together with our views on the outcome of DSRL's investigation, ONR will consider whether further enforcement action is warranted.

Failure of foam fire fighting system, FCA radwaste store

24 During routine testing of the system the valve on the duty foam delivery line would not freely operate. On changeover to the standby line, leakage was noted from the lagged pipework. The testing was immediately stopped and on further investigation it was discovered that part of the pipework within the lagging had corroded. The fire fighting system was reinstated quickly. DSRL has carried out an investigation.

25 ONR carried out a preliminary investigation shortly after the incident occurred and subsequently communicated the findings by letter. The condition of the foam fire suppression system raised concerns about the adequacy of compliance for safety related equipment external to a facility. The inspector concluded that the arrangements in place for the maintenance and inspection of the foam fire fighting system were not fully adequate. The inspector also questioned the adequacy of engineering substantiation that had taken place in support of a recent safety case review for the facility. There may also be implications for other facilities at Dounreay.

26 ONR has reviewed DSRL's investigation report. As yet we are unclear as to the extent of any residual problems at the facility in question and across the site and ONR continues to pursue this matter with DSRL.

~ **&† ž) " fi(%&, fifl(!* !(,**

27 Under health and safety legislation, ONR site inspectors, and other 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', but can take other forms. In addition, inspectors may issue enforcement notices to secure improvements to safety.

28 No licence instruments have been issued during the period.

29 Reports detailing regulatory decisions can be found on the ONR website at www.hse.gov.uk/nuclear/pars.

I **\$† + ' ž&%# %\$ &**

30 Insight into more of ONR's work as an independent regulator of the nuclear industry can be found in ONR's Quarterly News (<http://www.hse.gov.uk/nuclear/onr-quarterly-report.htm>). The online publication reports on key themes and developments in each of the regulatory programmes of work and provides an update on ongoing changes at ONR as it progresses toward becoming an independent statutory corporation. Regular news and updates are available on the ONR website (<http://www.hse.gov.uk/nuclear/index.htm>), together with information about our people, sites that we regulate and the work that we do, as well as key guidance and resources.

/ **fl%\$(fifl('**

Office for Nuclear Regulation
Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS

website: www.hse.gov.uk
email: ONREnquiries@hse.gsi.gov.uk

This document is issued by the Office for Nuclear Regulation (ONR), an agency of HSE. For further information about ONR, or to report inconsistencies or inaccuracies in this publication please visit www.hse.gov.uk/nuclear.