

Quarterly site report for Dounreay Nuclear Licensed Site

1 April to 30 June 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 Dounreay Nuclear Licensed Site available to the public. Reports are distributed quarterly to members of the Dounreay Site Stakeholder Group (DSSG) and are also available on the ONR website (www.hse.gov.uk/nuclear/llic).

Site inspectors from ONR usually attend DSSG 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 the ONR.

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Inspections

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

22 to 25 April 2013

7 to 9 May 2013

14 to 16 May 2013

20 to 23 May 2013

10 to 13 June 2013

24 to 27 June 2013

Routine matters

Inspections at Dounreay Nuclear Licensed Site

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

- (i) The conditions attached by HSE / ONR to the nuclear site licence;
- (ii) The Health and Safety at Work etc Act (HSWA) 1974; and
- (iii) Regulations made under HSWA (for example the Ionising Radiations Regulations 1999 and the Management of Health and Safety at Work Regulations 1999).

This entails 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 the following routine inspections were undertaken:

Management of operations including control and supervision

Dounreay Nuclear Safety Committee (DNSC)

ONR carried out an inspection for compliance with Licence Condition 13, Nuclear Safety Committee (NSC). All nuclear site licensees are required to have NSCs. The members are made up of experienced licensee staff, and managers and specialists independent of the site drawn typically from across the UK nuclear industry. The role of an NSC is to consider matters of significance to nuclear safety and to provide advice to the licensee.

LC13 prescribes a number of matters with which Dounreay Site Resoration Ltd (DSRL) must comply. For example, the terms of reference of the DNSC have to be formally approved by ONR, which means that they cannot be changed without a subsequent re-approval; there is a requirement for a minimum of seven members including at least one independent member; and the names, qualifications and experience of members have to be submitted to ONR.

ONR is aware of the nature and conduct of the DNSC through routine receipt of minutes of DNSC meetings. Consideration of these minutes indicates that the DNSC is properly constituted and presents a robust challenge to submissions. The evidence provided during this inspection confirmed that DSRL maintains tight control of the DNSC which in turn continues to provide effective challenge and advice on significant safety activities at Dounreay. Hence the inspection concluded that DSRL is compliant with LC13.

Inspections of facilities within the Fuel Cycle Area

Inspections were undertaken to consider the approach adopted to control and supervise operations. The inspector reviewed a task underway at the time of the visit to replace a cell window. The task had been done before but is not routine. During production of the modification proposal the knowledge and experience of personnel who had previously been involved with the task had been drawn upon. In order to reduce radiation dose rates a shield wall had been built in-cell prior to commencement of the task. The task was viewed on plant. Personnel were wearing suitable protective equipment. The method statement and risk assessment were available and had been signed on to as required. The supervisor was monitoring the task appropriately and health physics were in attendance to monitor personnel as required.

The inspections provided confidence in leadership and the application of control and supervision within the facilities. They also provided confidence of a positive safety culture within the facility and the application of the principle of ALARP (the licensee has a legal duty to reduce doses to a level which is as low as reasonably practicable, or ALARP).

Control & Supervision of Operations, Reactors

The inspector verified the way in which facility managers assure themselves that all of the activities were being carried out safely within their respective areas of responsibility. They explained firstly that before any work was authorised a check was completed to ensure personnel were suitably qualified and experienced, and secondly the work control process gave them assurance that the work would be completed safely. In addition, the facility managers stated that they spend a significant amount of their time on the workface, typically two hours per day, and that this is to be formalised as a key performance indicator and tracked at individual project level.

The inspector learned that work packs (comprising an instruction and risk assessment) are compiled as part of a five-week rolling work plan. The documentation is subsequently reviewed by a team of suitably qualified and experienced individuals. The inspector commented that best practice in this area was to conduct these reviews jointly as there is evidence that the review is more effective when all of the assessors are interacting. DSRL acknowledged the point and will trial it.

The inspector attended the 'plan-of-the-day' meeting which was chaired by facility management. This meeting had a wide attendance and addressed comprehensively issues such as work planned over the next 24 hours, work completed and any issues resulting. In addition, areas of overlap during project and operational work were resolved during the meeting which included use of cranes and specialist personnel such as electricians. All types of isolations were specifically discussed.

Overall the inspection provided confidence in the application of control and supervision within the Dounreay Fast Reactor (DFR) and Prototype Fast Reactor (PFR).

Staff training, qualifications and experience

An inspection was carried out on a facility within the Fuel Cycle Area to consider how training needs and competencies were identified and managed. At facility level a matrix of personnel was available that detailed individuals' competency status against requirements: this was largely complete and action was in hand to address gaps in the matrix. Technical competence is recorded on a central system and the line manager is informed when training requires revalidation. Operators are assessed locally against operating instructions and competency is recorded. The inspector sampled records for competency verification and these were satisfactory. Overall the inspector was satisfied that the facility was compliant with the licensee's arrangements for training.

Modifications to plant, equipment and safety cases

Site-wide compliance with Licence Condition 22

ONR carried out an inspection of site-wide compliance with Licence Condition 22, Modification or experiment on existing plant. LC22 is a significant aspect of the nuclear site licence because it requires the licensee to carry out a rigorous review of all modifications and experiments which may affect safety. The inspection considered the outcome of recent audits of compliance with LC22 carried out by the DSRL Independent Regulatory Department and the means by which DSRL management effects appropriate oversight.

ONR concluded that DSRL continues to control modifications adequately. The Dounreay Modification Assessment Panel (DMAP) provides effective oversight at its monthly meeting and does reject modification proposals from time to time. The process for annual renewal of facility management and the ten-yearly periodic reviews of safety both present opportunities to consider the cumulative effect of modifications on facility safety cases. The inspector noted that ongoing organisational changes might have a bearing on the means by which DSRL continues to assure itself as to the adequacy of LC22 compliance and this will be considered further.

Materials consolidation

ONR inspectors continued to engage with DSRL on the development of a new facility whose purpose is to characterise unirradiated fuel and repackage it in modern-standard fully-welded cans. The facility is necessary to ensure that the site's inventory of unirradiated fuel is stored in a form and within containment that is suitable for safe, long term storage and for transfer to Sellafield as part of the materials consolidation project. This included a regulator workshop at which inspectors from across ONR's regulatory functions and from the Scottish Environment Protection Agency (SEPA) met with staff from DSRL, Sellafield Limited and the Nuclear Decommissioning Authority (NDA) to enable DSRL to present to ONR the latest position on the design of the new facility and other related work and to promote discussion. This was a highly interactive meeting which provided a good opportunity for ONR to discuss the current position on the design of the facility and of related projects.

Decommissioning and Radioactive waste management

ONR carried out an inspection of decommissioning activities within the Fuel Cycle Area. Included was the progress with the remediation of redundant sentencing tanks, part of the plant used to process liquid effluent from the Material Test Reactor. The project to empty the liquor and sludge that the tanks held has been completed, and now DSRL's attention is turning to the options for their ultimate disposal. There is known contamination in the ground from historic leaks from the building associated with the tanks, and discussions on the management of this contamination is under discussion.

Across the facilities inspected, the site inspector identified that good progress is being maintained and appropriate consideration is being given to dose reduction and waste management. This provides confidence in DSRL's approach to decommissioning.

Organisational Changes

DSRL has recently been through a number of organisational changes following the NDA competition process which culminated in the appointment of a new Parent Body Organisation in April 2012. ONR considers that our engagement with DSRL throughout this process has been well managed and that as a result ONR was satisfied with DSRL's compliance with Licence Condition 36 (Organisational capability).

The ONR report to the DSG for October to December 2012 referred to ONR's consideration of the management of organisational change (MoC) associated with the proposed formation of the Technical Directorate. At the time we noted that the MoC for the formation of Technical Directorate was being pursued ahead of that for Assurance Directorate, and ONR noted the potential for gaps to appear in Assurance if the respective MoCs were not taken in parallel.

ONR undertook further inspections this quarter to verify the adequacy of these organisational changes. ONR has since written to DSRL to question whether the Assurance Directorate is sufficiently well resourced to fulfil its role adequately. ONR will convey the outcome of this issue in a subsequent quarterly report to the DSSG.

Industrial safety

Fire safety

An inspection was undertaken of selected fire safety themes to assess compliance with the Fire Scotland Act 2005. The inspector focused on the protective measures that support the means of escape strategy for areas of site undergoing accelerated decommissioning, and challenged the management arrangements to assess their effectiveness by examination of several areas of the site. The inspector also investigated the effectiveness of the arrangements for firefighting response and examined opportunities for pro-active fire safety management with particular emphasis on reducing the frequency and impact of alkali metal fires.

The intervention provided evidence that the overall standard of fire safety management and arrangements were satisfactory. Several observations to improve existing arrangements and build upon the good standards were demonstrated. From the evidence gathered during this intervention, I do not believe there are any deficiencies that seriously impact on fire safety.

Meeting Safety Representatives

ONR inspectors met with safety representatives during the quarter from organisations employed across Dounreay, including DSRL and their contractors. ONR very much values the contribution of safety representatives to nuclear safety at Dounreay.

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

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.

Incidents on the site

ONR continued its consideration of recent incidents on the site including one recorded in last quarter's report concerning the inadequate isolation of electrical supplies. ONR concluded that there appears to be a commonality in respect of poor risk assessments and safe systems of work (SSOW). As a result DSRL is undertaking a thorough review of their investigations of recent

incidents to consider whether the adequacy of risk assessments and SSOW might have influenced the cause of the incidents and to propose an improvement plan. This review will be considered by DSRL management and will then be passed to ONR for further consideration. The outcome will be covered in a future quarterly report.

As regards the specific issues associated with the incident concerning the inadequate isolation of electrical supplies, DSRL said that a decision had been taken not to isolate the cable because it affected a separate task. However DSRL's subsequent review had concluded that the cable should have been isolated. As a result DSRL has introduced a peer check system to specifically review the decisions and electrical isolations imposed by the site Authorised Persons (Electrical). In addition, the licensee has taken part in a recent benchmarking exercise across the NDA estate which concluded the DSRL arrangements for electrical safety are adequate. Therefore the focus is being placed onto the implementation of these arrangements and decisions taken by individuals managing activities across the site.

New Facilities

During the quarter ONR received a preliminary safety report (PSR) for two new facilities associated with the project to remediate the shaft and silo respectively. The facilities will retrieve, characterise, condition and repackage for safe interim storage the legacy radioactive waste currently located in the shaft and the silo. ONR informed DSRL that we wish to examine the later pre-construction safety reports for these facilities and may decide to examine other stages of the projects. Meanwhile ONR is considering the issues raised by the PSR. The receipt of the PSR is a significant step forward in these important remediation projects.

Regulatory activity

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' (LIs), but can take other forms. In addition, inspectors may issue enforcement notices to secure improvements to safety. There were no LIs or enforcement notices issued during the period.

Further information relating to regulatory decisions can be found on the ONR website (www.hse.gov.uk/nuclear/pars).

News from ONR

Insight into more of ONR's work as an independent regulator of the nuclear industry can be found in ONR's Quarterly News which is produced every three months. [The online publication reports](#)^[1] on the key themes and developments in each of ONR's regulatory programmes and provides an update about the ongoing changes at ONR, as it progresses toward becoming an independent statutory corporation.