



Office for Nuclear Regulation (ONR) Quarterly Site Report for Dounreay

Report for period 01 April 2014 to 30 June 2014

Foreword

This report is issued as part of ONR's commitment to make information about inspection and regulatory activities relating to the above site available to the public. Reports are distributed quarterly to members for the Dounreay Site Stakeholder Group (SSG) and are also available on the ONR website (<http://www.onr.org.uk/lrc/>).

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

1 INSPECTIONS

1.1 Dates of inspection

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

7 to 10 April 2014
12 to 15 May 2014
9 to 12 June 2014
16 to 19 June 2014

2 ROUTINE MATTERS

2.1 Inspections

2. 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 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).
3. 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. Inspections seek to judge both the adequacy of these arrangements and their implementation.
4. In this period, routine inspections of Dounreay covered the following:
 - Examination, Maintenance, Inspection and Testing
 - Management of operations including control and supervision
 - Staff training, qualifications and experience
 - Emergency preparedness
 - Incidents on the site
 - Radiological protection
 - Decommissioning
 - Organisational capability
 - Meeting Safety Representatives

2.2 Examination, Inspection, Maintenance and Testing

Systems inspection

5. ONR carried out an inspection of the Dounreay's arrangements for the inspection of safety related civil engineering structures with respect to Licence Condition 28 – Examination, inspection, maintenance and testing. In parallel ONR carried out a 'systems inspection' of civil engineering structures, to establish whether there is satisfactory linkage from the safety case limits and conditions through to maintenance requirements and the training of those tasked with carrying out planned structural inspections. Inspectors considered the adequacy of documented arrangements and sampled the civil engineering structures in two facilities.
6. Overall, inspectors concluded that the site's arrangements for the inspection of safety related civil structures were generally adequate. The material condition of the sampled buildings was generally good as were the standards of maintenance and housekeeping. Adequate practices included plant specific defect sentencing and remediation processes. Aspects that were considered to be below standard included a lack of inspection of inaccessible areas, and structural inspections not informed by the facility safety case.
7. Follow up actions are planned and the DSG will be updated in due course.

Compliance inspection, FCA

8. ONR undertook an inspection of a waste processing facility within the Fuel Cycle Area, for compliance with Licence Condition 28. The inspector sampled items classed as Safety Related Equipment, challenged calibration status, and sampled maintenance records. The inspector noted that the facility crane had suffered a number of breakdown maintenance problems and that DSRL had responded by undertaking a reliability survey from which a refurbishment package had been identified. The inspector was satisfied that DSRL had demonstrated adequate proactive consideration of plant maintenance outcomes with the aim of improving plant reliability. Overall the inspector concluded that DSRL had demonstrated adequate compliance against Licence Condition 28.

2.3 Management of operations including control and supervision

9. ONR undertook inspections of Dounreay reactors and of FCA facilities for compliance with Licence Condition 26 (Control and Supervision of Operations). The inspections included consideration of the management arrangements for control of work and examples of specific ongoing work activities. The inspection also considered changes in work control arrangements that have been introduced following DSRL's review of recent site incidents. Inspectors formed the view that site arrangements and their implementation at Dounreay reactors and on the FCA facilities considered were adequate.

2.4 Staff training, qualifications and experience

10. ONR undertook an inspection of a Fuel Cycle Area plant for compliance with Licence Condition 10 (Training) and Licence Condition 12 (Duly Authorised and other Suitably Qualified and Experienced Persons). The inspector considered the training programme, the training matrix which identified the competencies for each safety related post, and the training undertaken to implement the plant safety case. There appeared to be an effective system of assessment covering both off-the-job and on-the-job training. Training records sampled were in order. The inspector concluded that there was a satisfactory standard compliance with Licence Conditions 10 and 12.

11. ONR inspected the means by which a DSRL contractor provides assurance that its staff are suitably qualified and experienced for the roles they undertake. The inspector found that there is a range of general and specific training courses with defined refresher periodicity; Competency Definition Documents are prepared; and written assessments are completed. These assessments are signed-off both by the DSRL Project Manager and Facility Manager with written comments as to the candidate's suitability. The inspector concluded that the contractor had demonstrated the adequacy of systems in place for the assurance of staff competence.

2.5 Emergency preparedness

Proposal to consolidate three ICCs into one

12. ONR received a proposal to consolidate the three Incident Control Centres (ICCs) across the site into one, adjacent to the Dounreay Emergency Control Centre (DECC). The proposal reflects the changing nature of the site and is consistent with findings from recent demonstration emergency exercises. As part of this organisational change the DECC would be renamed the Site Emergency Command Centre (SECC). ONR has informed DSRL that we had no objection to the proposal subject to a satisfactory demonstration at the Level 1 emergency exercise in May, the outcome of which is reported immediately below.

Level 1 emergency exercise

13. ONR inspectors observed Dounreay Level 1 (that is, site based) demonstration exercise codenamed Delta 50. The scenario comprised simulated damage to LLW drums leading to an off-site release of radioactivity and to casualties. This was a relatively low consequence scenario but it was complicated by a number of separate and disconnected challenges. The exercise was well planned and was executed with enthusiasm.
14. ONR concluded that Delta 50 had been an adequate demonstration of Dounreay's emergency arrangements. However ONR had concerns about the operation of the site's lock-down arrangements which appeared to delay unnecessarily the nuclear safety and casualty recovery responses. ONR will discuss with DSRL the relative priorities of lock-down versus direct incident response mitigation.
15. ONR has conveyed its findings to DSRL by letter.

2.6 Incidents on the site

16. ONR undertook an inspection for compliance with Licence Condition 7 (Incidents on the Site). A Site Environmental and Safety Pause was held recently, focussing on a number of incidents with respect to the application of DSRL's initiative "Safer by the Dozen". During a plant walk-down the inspector gained positive feedback from this event.
17. The inspection provided confidence that incidents are being adequately investigated and improvements identified, hence that there was adequate implementation of the arrangements made by DSRL for compliance with Licence Condition 7.

2.7 Radiological protection

18. ONR is undertaking a series of interventions across UK nuclear licensed sites regarding the control of occupational radiation exposure. As part of this a specialist inspector visited Dounreay in May. There were two aspects to the intervention: to assess the general arrangements for restricting worker exposures under Regulation

8 of IRR99 (Restriction of Exposure); and to verify that the arrangements are being applied at the point of work through facility visits.

19. From the evidence gathered during this intervention the inspector was satisfied that there are no matters that impact on nuclear safety. He concluded that DSRL had demonstrated adequate compliance with IRR99.

2.8 Decommissioning

20. ONR inspected three facilities within the Fuel Cycle Area (FCA), and also the Prototype Fast Reactor (PFR) and the Dounreay Fast Reactor (DFR), to determine progress with decommissioning and assess compliance with Licence Condition 35 (Decommissioning).
21. Work is continuing in each of the FCA facilities. All facilities demonstrated that steady progress has been achieved to progressively reduce the hazard. The potential impact of Annual Site Funding Limit considerations is still to be fully determined.
22. On PFR and DFR the inspector considered the overall decommissioning strategy, the project lifetime plan and the competence of project staff. The inspector visited all major work areas on PFR to review progress. Overall the inspector was satisfied that PFR and DFR were compliant to an adequate standard with the requirements of Licence Condition 35.

Withdrawal of Approval of DSRL Decommissioning Milestone Arrangements

23. During the quarter ONR considered a DSRL request to withdraw an 'Approval'¹ of DSRL's decommissioning arrangements that was granted first in 2003 and again in 2009 when DSRL's decommissioning arrangements were revised.
24. In response to the 1998 Dounreay safety audit carried out by HSE and SEPA the then Licensee UKAEA produced the Dounreay Site Restoration Plan, which included the programme for decommissioning the site and identified a number of strategic and regulatory milestones. The part of the UKAEA's decommissioning arrangements that dealt with the control of changes to the regulatory milestones was Approved as a means of monitoring decommissioning progress. Since then considerable progress has been made and in recognition of the current programme to achieve Interim End State ONR has worked with DSRL to develop flexible permissioning and progress monitoring arrangements. DSRL has proposed improved arrangements for managing decommissioning, offering wider application and providing flexible interventions which better fit the ONR intervention strategy for the site than the Approved arrangements which are specific to monitoring decommissioning milestones. Hence ONR considered that it is no longer appropriate to Approve the arrangements.

2.9 Organisational capability

Annual Site Funding Limit organisational change

25. Discussions on organisational capability and the Annual Site Funding Limit (ASFL) continued during the quarter. Additional funding over next two years has been announced. Work is ongoing to determine the forward programme and some delays are expected although work will continue on most decommissioning fronts. A revised baseline submission to Nuclear Decommissioning Authority (NDA) in late

¹ In the context of ONR's permissioning, if management arrangements are 'Approved' they cannot be changed unless a further Approval is granted. Hence an Approval is a means of regulatory control.

Summer/Autumn is planned. ONR will continue to discuss this matter with DSRL and NDA.

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

2.10 Other work

27. ONR inspectors met with safety representatives during the quarter from organisations employed across Dounreay, including DSRL and their contractors. Safety representatives provide ONR with a valuable insight as regards day to day operations and safety culture, ONR very much values the contribution of safety representatives to nuclear safety at Dounreay. Apart from routine discussion on matters of mutual interest, ONR consulted Dounreay safety representatives on two specific matters: control of occupational radiation exposure (see Section 2.7 above); and the site's learning from experience in relation to recent site incidents.

3 NON-ROUTINE MATTERS

28. 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.

29. Matters and events of particular note during the period were:

Electrical power failure, 16 April

30. All electrical power was lost to the site for a period on 16 April. The power failure affected all of the north of Scotland. The Dounreay Site Emergency Command Centre was mobilised to coordinate site activities. Not all on-call personnel could be contacted due to mobile phone and landline telephone problems. DSRL's response to the incident is considered to be satisfactory although ONR awaits sight of DSRL's final report.

FCA incident 16 May 2014

31. During routine operations in a waste processing facility in the Fuel Cycle Area, a sodium light within a waste cell was removed from its holder and subsequently placed on the cell floor. Heat from the lamp caused a small quantity of adjacent waste to ignite. The site Fire Brigade attended and the cell inlet ventilation was closed. The combustible materials continued to smoulder for a short period of time. The Fire Brigade declared the area safe and left the area approximately an hour and a half after arriving. There were no indications of a release of radioactivity. DSRL's response to the incident is considered to be satisfactory although ONR awaits sight of DSRL's final report.

DSRL MD decision to stop operations

32. ONR has previously reported to the Dounreay Stakeholder Group on a decision by DSRL 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 through inclusion in operating instructions.

33. An inspection was carried out in April 2014 to gather sufficient evidence to support closure of the issue. The inspector found that DSRL had carried out a complete review of the PFR safety case to ensure there was a clear and accurate link between the hazard analyses and the safety case limits and conditions document and maintenance documentation. The inspector undertook some sample checks which revealed no discrepancies and underlined the quality of the improvements that DSRL had made.
34. The inspection provided assurance that significant and systematic improvements have been made to the arrangements, and that implementation is satisfactory. ONR is content that this matter is now closed.

Failure of foam fire fighting system, FCA radwaste store

35. ONR has previously reported to the Dounreay Stakeholder Group an incident which arose during routine testing of a foam fire fighting system, during which a valve on the duty foam delivery line would not freely operate. On changeover to the standby line, leakage was noted from the lagged pipework.
36. Plant modifications are now complete and revised corporate arrangements to control design and commissioning have been issued. ONR considers this event to be closed.

PFR Caustic release

37. Previously ONR has reported to the Dounreay Stakeholder Group on an incident within the Prototype Fast Reactor (PFR) during which operators were exposed to caustic fume, causing short term breathing difficulty and eye irritation.
38. ONR reviewed DSRL's response to this incident in April. As an example of the work undertaken, ONR had expressed concerns regarding the failure to implement some aspects of the risk assessment associated with the caustic event. DSRL has addressed this concern through individual and group training sessions and the revised work planning process has a renewed emphasis on the conduct of operations standard. Another improvement introduced is that the facility managers now have the opportunity to comment on safe systems of work associated with projects.
39. The inspector concluded that DSRL has taken adequate action to prevent a recurrence.

FCA incident

40. ONR has previously reported to the DSG an incident in March 2014, in the Maintenance and Decontamination facility within the Fuel Cycle Area. Components were being welded to a tank containing low level waste when smoke was seen coming from inside the tank. Welding ceased, the facility was evacuated, and the site fire brigade extinguished the fumes.
41. ONR followed up this incident in April. DSRL's investigation had determined that the risk assessment for the work was inadequate and that the correct process had not been followed. There had been a significant time delay between the work being initiated and completed. DSRL has taken action in this area through a series of briefings across the workforce but further work is required to ensure that improvements are achieved. ONR is content that no further intervention is necessary as regards the specific aspects of this incident.

4 REGULATORY ACTIVITY

42. 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.
43. The following LI was issued during the period:

Table 1

Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
17/06/14	Withdrawal of Approval	LI 519	Withdrawal of Approval of DSRL Decommissioning Milestone Arrangements

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

5 NEWS FROM ONR

44. 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>).

Annual Report and Financial Position 2013-14

45. The report is a companion document to [HSE's Annual Report and Accounts 2013/14](#) and is intended to present our opening position both in terms of achievements and financial management, as we begin life as a public corporation.
46. It includes the Chief Nuclear Inspector's Annual Statement 2013/14 on the safety and security of the nuclear estate and summarises ONR's judgements on the areas it regulates.
47. With this report we are saying that all of the sites we regulate are safe and secure and are working to reduce hazards.
48. There is further work to be done at some sites, particularly Sellafield where we have a new regulatory strategy in place, and we are engaging with licensees to secure improvements in specific areas.
49. The report is available on the [ONR website](#)

ONR Strategy 2015-2020

50. ONR is seeking feedback on its new strategy, which provides vision and direction for ONR and nuclear regulation for the next five years.

51. The consultation will run from 14 July to 6 October on the ONR website. ONR has a statutory obligation to have the new strategy in place by 1 December.
52. You can download the strategy via the [public consultations page](#) of the ONR website.

CONTACTS

Office for Nuclear Regulation
Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS
website: www.onr.org.uk
email: ONREnquiries@onr.gsi.gov.uk

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