Office for Nuclear Regulation

Office for Nuclear Regulation (ONR) Quarterly Site Report for Dungeness B

Report for period 01 April - 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 Dungeness SSG and are also available on the ONR website (http://www.onr.org.uk/llc/).

Site inspectors from ONR usually attend Dungeness SSG 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 site inspector and/ or the ONR Reactor 21 periodic shutdown project inspector made inspections on the following dates during the quarter:

2, 3, 4, 22, 23, 24, 29, 30 April
19, 20, 21, 22 May
25, 26 June

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

9 April – Data processing system replacement (control and instrumentation specialists)
23, 24 April – Reactor 21 periodic shutdown (graphite structural integrity specialists)
29 April – Reactor 21 periodic shutdown (electrical engineering specialist)
30 April – Reactor 21 periodic shutdown (civil engineering specialist)
30 April – Incident follow up (electrical engineering specialist)
29, 30 April and 1 May – Reactor 21 periodic shutdown (management systems specialist)
7, 8, 9 May – Reactor 21 periodic shutdown (mechanical engineering specialists)
8 May – Reactor 21 periodic shutdown (radiological protection specialist)
13 May – Reactor 21 periodic shutdown (control and instrumentation specialist)
19, 20, 21 May – Reactor 21 periodic shutdown (steel structural integrity specialists)
18, 19 June – System based inspection (structural integrity and mechanical engineering specialists)
25 June – Incident follow up (electrical engineering specialist)

ONR superintending inspectors made inspections on the following dates during the quarter:

20, 21 May – Reactor 21 start-up meeting
25, 26 June – Annual review of safety

The ONR Chair and the ONR Chief Executive Officer made inspections on the following date during the quarter:

4 April – Periodic shutdown

Health and Safety Executive (HSE) Hazardous Installations Directorate (HID) inspectors made inspections on the following dates during the quarter:

19 June - Control of major accident hazards competent authority

2 ROUTINE MATTERS

2.1 Inspections

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 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).

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.

In this period, routine inspections of Dungeness B covered the following:

- training;
- management systems;
- commissioning;
- modification or experiment on existing plant;
- examination, inspection, maintenance and testing;
- periodic shutdown;
- IRR99;
- review ONR issues database;
- attending the Dungeness Site Stakeholder Group meeting;
- meeting safety representatives;
- attending the annual review of safety.

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.

In addition to our compliance inspections, based on the conditions attached to a licence, we are now inspecting operating reactors based on safety related systems. Each site has a safety case which demonstrates how it operates safely. For advanced gas cooled reactors, each of approximately 30 key systems will be inspected against the claims made upon them in the safety case. The aim is to systematically inspect all the significant safety related systems within a five year cycle. ONR believes that this will provide more robust assurances of the site's safe operation and how the safety case is being implemented.

During this quarter one system was inspected: 'CO_2 storage and distribution'. Based on interviews, review of documentary evidence and walking down the system the ONR team confirmed that the safety case claims sampled were met. An improvement action was raised relating to licence condition 28 (examination, inspection, maintenance and testing). Further information will be provided in the executive summary of Dungeness B Intervention Report 14-008 (see http://www.onr.org.uk/intervention-reports/2014/index.htm).

2.2 Other work

The site inspector attended the Dungeness SSG meeting on 30 April 2014.

The site inspector held a periodic meeting with safety representatives, to support their function of representing employees and receiving information on matters affecting their health, safety and welfare at work.

Annual Review of Safety 2013

The ONR site inspector and an ONR superintending inspector attended the Dungeness B power station annual review of safety meeting on 26 June 2014. Prior to that meeting a plant walkdown took place on 25 June 2014. The Environment Agency site inspector and her line manager took part in the plant walkdown and observed the annual review of safety meeting.

The annual review of safety meeting provided an opportunity for station to present a review of safety of the site during the past year (January - December 2013) and to look forward to the station's plans for improving safety in 2014 and in the longer term.

Station provided a comprehensive information pack prior to the meeting which was reviewed jointly by ONR and EDF Energy Nuclear Generation Ltd's (NGL's) internal regulator prior to the meeting. This allowed the meeting itself to focus more strategically on the forward look.

ONR concluded that station's safety performance and progress with safety related improvements in 2013 were adequate, as was station's plans for safety improvements in 2014.

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:

- During the quarter, three events were reported that were categorised by NGL, the licensee, as "Technical Specifications Non-Conformance Events". In terms of ONR's guidance for notifying and reporting incidents and events this corresponds to category NS05 "Any operation or condition of plant that is prohibited by operational limits and conditions or operating rules". These events occurred on 14 March 2014[1], 11 April 2014 and 27 April 2014. The licensee assigned final International Nuclear and radiological Event Scale (INES) ratings of 0 (no safety significance) to the first two events and a final INES rating of 1 (anomaly) to the third event. I discuss the 27 April 2014 INES 1 event separately below. I also followed up the 14 March 2014 INES 0 event at site and I continue to monitor NGL's corrective action programme relating to Technical Specification compliance at Dungeness B by means of an ONR issue. I am satisfied that Dungeness B is making adequate progress implementing its plan. I do not intend to discuss the 14 March 2014 or the 11 April 2014 events in future SSG reports.
- On 27 April 2014 Dungeness B experienced a grid disturbance which caused Reactor 22 to automatically shut down. Reactor 21 was on its periodic shutdown at the time. The disturbance was caused by switching operations in the National Grid Electricity Transmission (NGET) 400kV substation which is off both the Dungeness A and the Dungeness B nuclear licenced sites. The disturbance involved a loss of one phase of the three phase 400kV electrical supply to the site. The nature of the fault was such that only a small drop in voltage at the site was detected. An electrical engineering specialist inspector and myself followed up this event at site on 29 April and 25 June 2014. Electrical engineering specialist inspectors also followed up this event with NGET on 18 July 2014. We concluded that the Central Control Room staff

[1] Although this event occurred on 14 March 2014 it was discovered during this quarter.

demonstrated good decision making on the day and that key plant operated as expected. We also concluded that this fault was more challenging than the complete loss of off-site power in October 2013. Dungeness B has provided an integrated corrective action programme relating to this event and I will raise an issue to monitor implementation of this programme. ONR is also following up this event with NGL fleet wide. I will provide a final statement on this event in a future SSG report.

- Reactor 22 was manually shut down on 23 and 29 May 2014 (the automatic shutdown of Reactor 22 on 27 April 2014 has been discussed already). Both manual shut downs were unplanned and were assigned final INES ratings of 0. In the first event a control rod dropped slowly into the core due to a shear pin failing as per its design intent. I followed this event up at site in July and I do not intend to discuss it in future SSG reports. NGL's investigation of the second event (relating to unavailability of the Back Up Cooling Water system) is ongoing and I will follow this event up at site once NGL's investigation is complete and report the outcome in a future SSG report. Across the NGL fleet a comparatively high incidence of unplanned manual or automatic shutdowns has led to NGL putting in place a significant learning oversight process to improve cross station learning. I inspected this process and consider that it is capable of producing improvement.

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.

LI 543 was issued to permission start up of Reactor 21 after its three yearly periodic shutdown. In these shutdowns, the licensee conducts routine maintenance checks and implements plant upgrades. ONR's permissioning decision included an assessment of a safety case produced by the licensee to support a change to the allowable weight-loss limit for the graphite of the reactor core. Since there was significant media interest in this decision, ONR has written a special feature "Graphite Cores of Advanced Gas-cooled Reactors" in its Quarterly News for April – June 2014. ONR's full report dealing its Reactor 21 start up permissioning decision, including its consideration of the graphite related issue, is at http://www.onr.org.uk/pars/2014/dungeness-b-13-039.pdf.

- The following LIs and Enforcement Notices have been issued during the period:

Table 1
Licence Instruments and Enforcement Notices Issued by ONR during this period

Date	Type	Ref No	Description
18/06/2014	Consent	543	Consent under Licence Condition 30(3) to start-up Reactor 21 following the 2014 periodic shutdown.

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).

Annual Report and Financial Position 2013-14
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.

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.

With this report we are saying that all of the sites we regulate are safe and secure and are working to reduce hazards.

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.

The report is available on the ONR website.

For Dungeness B, the report notes that in 2013/2014 the station received an enhanced level of regulatory attention but that performance is improving. The report notes that the enhanced attention was due to reasons including potential coastal flooding, graphite weight loss and the number of unplanned reactor shutdowns. These reasons have all been discussed in ONR quarterly site reports for Dungeness B and at Dungeness SSG meetings during the year. The report notes a delay in implementing some planned safety improvements. It should be noted that no actual physical safety improvements were delayed. However, NGL's high safety priority work to strengthen the sea flooding defences in particular led to delays in closing out documentation associated with modifications during part of the year. The position on this close out had recovered over the year as a whole (to 31 March 2014).

ONR Strategy 2015-2020
ONR is seeking feedback on its new strategy, which provides vision and direction for ONR and nuclear regulation for the next five years.

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.

You can download the strategy via the public consultations page of the ONR website.

6 CONTACTS

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