

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

Report for period 1 July to 30 September 2021

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 to members of the Dungeness Site Stakeholder Group and are also available on the ONR website (<http://www.onr.org.uk/llc/>).

Site inspectors from ONR usually attend Dungeness Site Stakeholder Group meetings where these reports are presented and will respond to any questions raised there. Any person wishing to enquire about matters covered by this report should contact ONR.



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1 Inspections

Dates of inspection

ONR inspectors undertook inspections at EDF Energy Nuclear Generation Ltd (NGL) Dungeness B Power Station (DNB) on the following dates during the quarter:

- 7- 8 July 2021
- 13 -16 July 2021
- 9 -13 August 2021
- 10 -12 August 2021

Some of the interventions that were undertaken in this period were conducted remotely due to the Covid-19 pandemic.

2 Routine Matters

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 Act 1974 (HSWA74); and
- Regulations made under HSWA74, for example the Ionising Radiations Regulations 2017 (IRR17) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

The station's arrangements continued to facilitate site-based inspections during this reporting period. However, due to the COVID-19 pandemic the station continued to manage its pandemic arrangements in order to protect its own staff and ensure that there was no degradation in nuclear safety.

Compliance Inspections

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

- Licence Condition 6 – Documents, records, authorities and certificates
- Licence condition 25 - Operational records
- Conventional health and safety compliance for work at height and control of substances hazardous to health (COSHH)

7-8 July 2021

Conventional health and safety compliance for work at height and control of substances hazardous to health (COSHH)

This intervention was carried out by two ONR Nuclear Internal Hazards and Site Safety specialist inspectors and the ONR recovery site inspector

The intervention comprised:

- discussions with DNB staff, contractors, and a Trade Union safety representative.
- site walk-down accompanied by DNB staff and contractors.
- sampling of documents and records
- email correspondence after the site visit with DNB seeking clarification on documents and records.

Regulatory advice and judgements were provided by the ONR inspectors during the inspection and were based on determining compliance with sections 2 and 3 of the Health and Safety at Work etc. Act 1974 and the relevant statutory provisions made under the Act including Work at Height Regulations 2005, Management of Health and Safety at Work Regulations 1999, Control of Substances Hazardous to Health Regulations 2002.

ONR inspectors observed and followed the COVID-19 workplace control measures that NGL had put in place including testing arrangements before attending site, use of facemasks, hand-sanitising and cleaning regimes in buildings, social distancing. The arrangements put in place at DNB were considered to be adequate.

The inspectors noted an area of good practice, which was that DNB had developed and was using a roof register that contained sufficient information for work on each of the roofs (more than 200 in total) to be planned safely.

Whilst NGL's arrangements in managing work at height and COSHH met ONR's regulatory expectations, there were minor shortfalls identified against COSHH requirements in relation to a painting task that required improvements.

Based on the samples observed and examined, ONR inspectors were satisfied that NGL demonstrated adequate management of hazards and risks associated with work at height and COSHH against relevant good practice. As a result, an intervention rating of Green was provided.

13-16 July 2021

Compliance inspections of LC 6 (Documents, records, authorities and certificates) and LC25 (Operational records)

The ONR nominated site inspector undertook a compliance inspection of station's compliance arrangements for LC6 and 25 for the station's data store repository. His inspection identified that there had been further improvements since his last inspection

in September 2020. Further rationalisation of the store's contents had been undertaken, with only a few areas remaining to be progressed which the station is on track to complete. His examination of station documents and condition monitoring arrangements for the data store identified that DNB was meeting its regulatory requirements for its LC6 and 25 arrangements, He therefore concluded that this inspection warranted a green rating for both license conditions

System Based Inspections (SBI) 13-16 July 2021

In addition to our compliance inspections based on the conditions attached to the nuclear site licence, ONR also inspects operating reactors against safety-related systems. Each site has a safety case that demonstrates how it operates safely. For Advanced Gas-cooled Reactors, each of the key systems will be inspected against the claims made upon them by the safety case. The aim is to systematically inspect all the significant safety related systems within a five-year cycle. ONR considers that this will provide additional assurance that operations on the Dungeness site are safe. Each of these system inspections considers the relevant licence conditions below:

- Licence condition 10: Training
- Licence condition 23: Operating rules
- Licence condition 24: Operating instructions
- Licence condition 27: Safety mechanisms
- Licence condition 28: Examination, inspection, maintenance and testing
- Licence condition 34: Leakage and escape of radioactive material and radioactive waste

Two SBI were undertaken in July and August which covered the following station areas:-

Sea Defences, Flood Protection and Drainage SBI

The SBI inspection was undertaken by a multi-disciplinary team of ONR inspectors, including the DNB Site Inspector, Civil Engineering, Fault Studies / Probabilistic Safety Analysis, External and Internal Hazards specialist inspectors. The purpose of this inspection was to determine whether the station's safety systems and components were able to fulfil their safety functional requirements in line with the station's flooding safety case.

Given the nature of this SBI a walk down of the following areas was undertaken: -

- Seismic monitoring equipment
- Flood Barrier
- CW Pump House / Essential Diesels / Back Up Diesel Generators (BUDG) / Additional Feed System (AFS)
- Drainage systems
- Site layout relevant to flooding and drainage features
- Ponds Area

From the evidence sampled during this SBI, ONR judged that the stations sea defences, flood protection and drainage systems adequately fulfilled the requirements of the safety case and fulfil their safety functional requirements.

No break supplies system; emergency generation and short break supplies Systems; transformers, grid systems, and main electrical system that support the function of the emergency cooling water system (ECWS).

The inspection was carried out by an electrical specialist inspector with support from a nuclear associate and supported by ONR's Dungeness B site inspector. The inspection consisted of a safety case informed SBI of the combined emergency generation, and short break supplies systems, no break systems, transformers, grid and main electrical systems to judge the systems' performance against their safety functions. A function of these systems is to provide the infrastructure for electricity supply to Dungeness B's ECWS pumps under normal operations and in the event of an electrical supply interruption or a grid derived disturbance.

At Dungeness B there are redundant and diverse electricity supplies to the ECWS pumps for these purposes. The redundant and diverse electricity supplies are achieved through (i) the transformers, grid and main electrical systems and (ii) in the event of an electrical supply interruption or a grid derived disturbance system through the emergency generation, short break supplies and no break systems.

This inspection was based on sampling the implementation of the licensee's arrangements provided by NGL against the LCs. The objective of the inspection was to determine whether the licensee's arrangements were adequately implemented and in accordance with the systems' safety case requirements.

From the evidence sampled during this inspection against LCs 10, 23, 24, 27, and 28, ONR considered that NGL's implementation of its arrangements for the emergency generation, and short break supplies systems, no break systems, transformers, grid and main electrical systems that support the function of the ECWS pumps met the requirements of the safety case.

Other work

Dungeness B Performance Improvement

ONR currently regards Dungeness B as being in 'enhanced attention' and has allocated extra resources to advise and support the station as it improves its performance further and monitor the safety performance of the station as evidenced by our regulatory programme and the station's operating experience.

In the light of the decision not to return to power generation (see below), the station's performance improvement plan (PIP) will no longer be run as a separate programme but many of its activities will be included in the site-wide programme to prepare for defuelling. The station had made some significant progress over the eighteen months of the PIP programme. ONR will continue to engage with these activities and to seek

evidence of sustained improvements in safety performance, towards eventual exit from enhanced attention.

Station Reported Events Follow up

This intervention was a reactive inspection for two reported incidents to ONR. This reactive intervention undertook preliminary enquiries to establish further details into these events. This reactive intervention was supported by the recovery site inspector.

The incidents investigated were: -

- The loss of water chemistry control to reactor 22 boilers.
- The loss of boiler 27 superheater penetrations carbon dioxide in air monitoring equipment.

For the loss of water chemistry control to reactor 22 boilers event, the site inspector undertook interviews with several members of the station's senior leadership team, central control room supervisors, and technical staff who were responsible for ensuring the water chemistry to reactor 22 boilers was controlled. This intervention also included a visit to the station's water chemistry control plant areas. From his preliminary enquiries he identified that there had been significant shortfalls in meeting the expected standards for the following Licence conditions:

- LC17 - Management Systems
- LC23 - Operating Rules
- LC24 - Operating Instructions
- LC 28 - Examination, inspection, maintenance and testing

In light of the site inspector's findings and observations, he rated the above license conditions as RED. Because of the significance of the compliance shortfalls he observed, the site inspector applied ONR's Enforcement Management Model (EMM) to determine the most appropriate enforcement action in order to bring the station back into compliance. From this process the site inspector recommended that formal enforcement action should be served on the station in the form of a Direction under licence condition LC15(4).

This Direction requires the station to complete a review and reassessment of safety covering the station's arrangements for boiler feedwater quality control. ONR has specified that this review and reassessment includes:

1. Plant, processes and procedures which control or have a direct effect on boiler feedwater chemistry.
2. Other systems where chemistry control is important to safety.

This review and reassessment report must be submitted to the Office for Nuclear Regulation by 1 December 2021.

For the loss of boiler 27 superheater penetrations carbon dioxide in air monitoring equipment, the site inspector held discussions with the central control room staff, the reactor engineering group head and the station's technical safety and support manager and undertook a plant visit into the Radiological Controlled Area to visually inspect the equipment that was left disconnected.

At the time of the inspection the station was undertaking its own investigation into the events surrounding this second incident. The site inspector was content with the station's approach and that there were other diverse systems available which would provide early indications of a boiler tube leak. He therefore does not intend to follow-up this event any further.

3 Non-Routine Matters

Since NGL's decision to move the station into the post generation phase ONR has been regularly engaging with the licensee to discuss the governance of the post generation programme and the work scope which will deliver the activities and safety justifications needed for shutdown and defuelling. ONR is developing a proportionate intervention and permissioning strategy to maintain appropriate regulatory control over the post generation programme.

4 Regulatory Activity

ONR 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, see table below.

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

Date	Type	Ref No	Description
08/09/2021	LC15(4)	566	Direction

5 News from ONR

Below are summaries of key activities over the last three months. Further detail is available on our [website](#).

Enforcement action

In July, we served an improvement notice on Devonport Royal Dockyard Ltd (DRDL) for shortfalls in its health and safety arrangements. The notice was served after DRDL failed to demonstrate consistent and effective arrangements to control and monitor the risks associated with working at height at its Devonport site. DRDL must comply with the requirements of the improvement notice by 31 March 2022.

In August, we announced that Morgan Sindall Infrastructure Ltd had complied with an improvement notice served in January 2021 after workers came close to striking a live high voltage electric cable during excavation work at the Sellafield site.

COVID-19: ONR Position

We are continuing to obtain assurance that nuclear site licensees and other dutyholders are adequately resourced to continue to safely and securely carry out their activities. We remain satisfied with industry's response at this time; there has been no significant change to dutyholders' safety and security resilience.

We have measures in place to try and prevent asymptomatic ONR staff unwittingly conveying the virus onto a regulated site. We require all staff to take a circular 1 health (C1H) antigen test in advance of them visiting a site. In addition to the C1H test, we also require them to take a lateral flow test on the morning of their planned site visit. We are keeping our COVID-19 testing guidance under regular review, in-line with the changing national context and any further developments in industry approaches to testing arrangements.

Other

In July, our project to become the UK's domestic safeguards regulator was named the public sector's [Project of the Year at the National Project Awards](#).

In September we invited stakeholders to submit comments on our updated reference papers for Coastal Flood Hazards and Meteorological Hazards for Nuclear Sites. Although supplementary to our normal governance process, we are doing this due to stakeholder interest in these topics and our commitment to being an open and transparent regulator.

The reference papers provide additional detail on the analysis of the external hazards for nuclear sites and have been produced by our [Expert Panel on Natural Hazards](#), a

group of academic and industry technical specialists working under contract to provide us with independent expert advice. You can find out more about how to get involved and comment on these papers on our [website](#).

6 Contacts

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