Environment Agency Report to the Dungeness Site Stakeholder Group

May 2022

Introduction

This report covers our regulation of Dungeness A and B Sites and related environmental matters for the period November 2021 to April 2022.

The Environment Agency's priority remains to protect people and the environment. We have set out how we are doing this across the many areas we regulate, and on which we provide advice and guidance. For example, flood defence, flood warning, environmental sampling, permitting, angling and fisheries, waterways management and billing. Please see our page on GOV.UK (www.gov.uk/government/organisations/environment-agency).

Radioactive Substances Regulation

We regulate radioactive waste disposals through environmental permits that contain limits and conditions aimed at minimising wastes and protecting the environment. We check compliance with the permit by undertaking regular inspections. These are recorded on Compliance Assessment Reports which detail our inspections and any non-compliance(s) found.

On 9th and 10th February 2022, we carried out an inspection at Dungeness A on the radioactive characterisation of the boilers which will feed into the "boilers down" project. We also looked at the characterisation of one of the pond tanks where wet ILW is being retrieved for drying and placing in containers for interim storge at Bradwell.

On March 30th, 2022, we conducted an inspection at Dungeness A jointly with the ONR (Office for Nuclear Regulation) on the damage caused by storm Eunice. We took the opportunity to discuss various other topics whilst at site.

On 22nd-23rd February 2022, we conducted an inspection of the Spent Fuel Storage Ponds at Dungeness B. In addition, we inspected solid radioactive waste management at Dungeness B on 29th March 2022.

We also maintain regular contact with the sites by remote means in addition to formal correspondence and site visits.

Site Regulation

Dungeness A

We are in regular contact, several times during the month with Senior Managers at Dungeness A to ensure that we are kept in touch with progress on decommissioning, progress on actions and recommendations and any emerging issues at the site.

Inspections:

Following our February inspection, we made some recommendations for the boiler characterisation strategy which the Operator will consider. We also saw the progress made with commissioning of the modular active effluent treatment plant. We were due to

see the environmental performance criteria for this plant in practice (see below) but due to delays in commissioning we could not achieve this.

During our visit to site on 30/3/22, we were given a presentation of how the site is looking at sustainability in general using the Magnox framework and in the boilers down project in particular. We judged what the Operator was doing to be good practice.

Storm Eunice.

Following storm Eunice on 18th February 2022 we liaised extensively with the site to understand any environmental impacts from the damage caused. We were happy with the Operator's response. It was reported to us that no contamination areas were affected, and all environmental routines required to ensure compliance were continued. It was also reported to us that ventilation stacks for gaseous radioactive waste were unaffected. Any material blown off site was collected and has since been found to be non-radioactive. We inspected the damage on 30/3/22 with the ONR. There is a Root Cause Investigation (RCI) ongoing by the Operator. We spoke to the RCI team to understand their terms of reference which we were content with. We await their report which we will assess.

Environmental Monitoring Programme (EMP).

We have agreed with the Operator the extent of the EMP following their proposals to reduce the amount of monitoring after the pond drain was completed and the subsequent reduction in aqueous waste discharges. The Operator has agreed with our view that the programme should not be reduced as much as originally proposed (in July 2021).

Aqueous waste discharges and the MAETP.

Dungeness A is preparing to use a new Modular Active Effluent Treatment Plant (MAETP) to meet its ongoing aqueous waste disposal needs and facilitate decommissioning of the existing Active Effluent Pond Water Treatment Plant.

In December 2021 we assessed a proposal by the Operator to define waste acceptance and environmental performance criteria for the MAETP. We think these are generally acceptable and made some further recommendations for the Operator to consider. We will pick up the points we raised in an on-site inspection and will ensure that the arrangements are being complied with.

The Operator had made an application for a permit variation (water discharge permit) to allow water from the turbine hall voids to be discharged to sea and for the aqueous waste originating from the reactor voids to enter a discharge route direct to the surface water drains. Our national permitting service (NPS) issued this variation in December 2021 (see below). We assessed a document regarding the environmental performance criteria for the reactor void water. We wish to ensure there is adequate monitoring in place to prevent any impact to the environment from the use of this route. We discussed the project with the Operator during our meeting at site on 30/3/22. We have some queries on the proposed way forward and we will carry on our discussions with the Operator.

Engagement with the Operator regarding the turbine hall void.

Following our last SSG report we have issued a local enforcement position to allow the pumping of the turbine hall void to stop. At present the voids are pumped by the Operator (as above) to prevent high pH leachate from entering groundwater. This has been the case since the Operator placed rubble into the void following the turbine hall demolition in 2015. The Operator wishes to stop the pumping so the void can be infilled, and a crane be placed in the area to support the "boilers down" project. The Operator has been able to

demonstrate that stopping pumping will have a low environmental impact when all factors are considered.

Our enforcement position will be on the understanding that the environmental impact of stopping the pumping is no more than already anticipated and that there is adequate surveillance and contingency in place. We are also in discussion to ensure that whatever material is used to fill the void does not in itself cause any environmental impact.

Further to this the Operator will need to infill culverts in the turbine hall void which run under the material previously emplaced. The Operator has determined that there is some 3000m3 of water in these culverts that will need pumping out. The Operator has applied for a further variation to the water discharge permit to enable this water to be removed and disposed of (see below). Due to the time for a permit variation to be determined and to allow the project to continue we have issued a further local enforcement position to allow the water in the culverts to be pumped and discharged to sea. We are satisfied that the environmental impact of such a discharge is low.

Joint EA/ONR meetings with the Operator.

We have remote regulatory meetings with the Operator and ONR on a monthly basis. We discuss COVID issues, significant events and learning over the previous month, a brief update on projects/programmes and upcoming Regulator inspections.

Quarterly we have larger strategic meetings (last 9th March 2022) where we discuss future strategies/lifetime plans for the site, waste projects and various decommissioning topics. These meetings ensure the regulators can discuss issues at site together with the Operator.

Other issues.

We continue to liaise with the Operator regarding other projects at site

We were in discussion regarding monitoring of gaseous waste in the low-level active waste (LLAW) plant. We had been informed that the gaseous sampling nozzle in the low-level active waste ventilation plant may not be of the correct dimensions to ensure isokinetic sampling. The probe was upgraded and in March 2022 we assessed an environmental advice note from the Operator which indicated that the upgrade had not made any difference to the measurement of gaseous waste from the LLAW plant, and that sampling had been representative.

We are still in dialogue with the Operator on further characterisation disposability of pond skips in on-site storage (as reported at the last SSG). Magnox are still considering their sampling strategy. We discussed the skips with the Operator at our visit in February 2022. We reviewed a report where Magnox determined that no ILW skips were sent to the low-level waste repository due to any error in characterisation. Our contractors have been looking at this project and in one of their reports to us, they confirmed this.

During our visit in February 2022, we were informed that in January 2022 the Operator performed a comparison of the contents of the nuclear, statutory, and radiological environmental maintenance schedules (REMs) and routines identified as being on the maintenance Schedule in Passport (the maintenance scheduling software). This identified several discrepancies with some entries in Passport not being reflected in the relevant maintenance schedule and some entries in the maintenance schedules not having entries in Passport.

We reviewed an Actual Cause Investigation (ACI) of the reasons behind these discrepancies. The ACI recommended various actions to prevent a recurrence and there were no actual environmental consequences on this occasion. We were satisfied with the conclusions of the ACI and we will check to ensure the Operator implements recommendations outlined in the ACI.

As part of the "boilers down" project we are discussing with the Operator a proposal to leave the drains around the boilers in place whilst the demolition programme goes ahead. We want to be assured that the Operator will revisit the disposal of these drains at a later date and that there will be no unacceptable environmental consequences from leaving the drains for several years. We are in discussion with the Operator about how they wish to proceed under the GRR (Management of radioactive waste from decommissioning of nuclear sites: Guidance on Requirements for Release from Radioactive Substances Regulation, https://www.sepa.org.uk/media/365893/2018-07-17-grr-publication-v1-0.pdf).

Dungeness B

Radioactive Substances Regulation

Site Inspections

On the 22nd – 23rd February 2022, we conducted an inspection of the Dungeness B (DNB) Spent Fuel Storage Ponds. This was (in part) a joint inspection with ONR. The aim of the inspection was to assess DNB's preparedness for the first Defueling Phase with respect to application of Best Available Techniques (BAT) to minimise:

i. the activity of aqueous radioactive waste discharged into the environment
ii. volume of radioactive waste disposed of by transfer to other premises

We did not identify any permit non-compliances during the inspection. One of the recommendations we made was for DNB to:

i. conduct a review of pond water activity concentrations and liquid radioactive waste discharges arising from Defueling activities. The review should also consider the current BAT arrangements to determine whether they will remain applicable during Defueling.

The output from the recommendation above will help us to assess the adequacy of current BAT arrangements and whether it is necessary to vary DNB's environmental permit in advance of defueling operations. The station has until 12th May 2022 to confirm acceptance of all recommendations outlined in the Ponds inspection report.

On 29th March 2022, we conducted a solid radioactive waste inspection at DNB. The aim of the inspection was to assess the station's use of BAT to:

i. minimise the volume of radioactive waste disposed of by transfer to other premises
ii. characterise, sort and segregate solid radioactive waste to facilitate optimised disposals

We identified a record keeping gap due to a lack of reports describing findings of waste containment inspections completed by DNB during 2021. These inspections are a requirement specified in the station's solid waste management procedures. However, we could not determine (during our inspection) whether the procedures require DNB to retain the reports of completed waste containment inspections.

We are expecting further information from the station on 12/05/2022. Once received, we will assess whether DNB has breached one or more of its permit conditions. Following this, we will draft the inspection report, and specify actions and/or recommendations for improvement. We will provide an update on our final conclusions at the next SSG meeting.

Events and Enforcement

Dungeness A.

Nothing to report.

Dungeness B

We recorded three *CCS4* (*C*ompliance *C*lassification *S*cheme *c*ategory 4) permit non-compliances against DNB in March 2022. A *CCS4* breach is one that could result in an incident having no or negligible impact on people and the environment.

We identified these permit breaches during our review of DNB's 2021 Q2 Environmental Monitoring Programme (EMP) Returns. The permit conditions breached, with brief descriptions of the non-compliances are as follows:

i. **4.2.2 (b),** as specified in the CEAR (Compilation of Environment Agency Requirements) requirement 4.2.2 - Part 2:
   a) Failure to provide prompt notification of a genuine sediment sample 4-sigma result.
   b) Reporting of an inaccurate water sample 4-sigma result.

ii. **1.1.1 (a):**
   a) Failure to implement procedures to enable prompt notification of a genuine sediment sample 4-sigma result.
   b) Failure to implement procedures for prompt and thorough investigation of abnormal results to enable identification of the inaccurate water sample 4-sigma result and to prevent its reporting.

iii. **2.3.6 (a):** - Failure to implement adequate arrangements after routine maintenance of the Liquid Scintillation Counter to assure its normal performance for sample analyses necessary to determine compliance with permit conditions.

The station has completed the actions we specified to return to compliance and prevent a recurrence of the above permit breaches.

Annual Review of Safety and Environment

We attended the annual regional review of safety, security and environment held on 10th May 2022. The review was at Sizewell A and covered all 3 sites in the Magnox southeast area (Sizewell A, Bradwell and Dungeness A).

Environmental Permitting

Dungeness A

Radioactive Substances Regulation

Water discharge permit

Our National Permitting Service (NPS) determined an application to add the discharge from the turbine hall void water to the permit and issued a variation to this permit in

December 2021. We previously had determined that this water which is discharged to sea needs to be included. This application also considered the proposal to discharge waste from the reactor voids to the surface water drains (see above).

The Operator has also applied for a further variation to discharge water from the turbine hall culverts to sea (see above).

Dungeness B

Nothing to report

Discharge Reports

Both sites are required to report to us liquid and gaseous discharges to the environment on a monthly basis. Liquid and gaseous discharges from both Dungeness sites remain within the limits set by the Environmental Permits.

Dungeness A

Dungeness A has submitted the gaseous and liquid waste discharge returns required to be reported to us. We have reviewed the discharge returns covering the period of this report and did not identify any unusual or unexplained trends. We continue to monitor all discharge reports.

Dungeness B

Dungeness B has submitted gaseous and liquid waste discharge returns in line with requirements of the environmental permit. We are in the process of reviewing the discharge returns and will update the SSG if we identified any unusual trends.

Environmental Monitoring

The Operators carry out monitoring of various environmental samples at periodic intervals and report the information to us. Dungeness B staff carry out the work on behalf of both sites. The programmes for the two sites are slightly different to reflect the radionuclides that are being discharged, the historical discharges and the operational activities taking place at each site.

Dungeness A

Dungeness A has submitted the Environmental Monitoring returns required to us. We reviewed the environmental monitoring returns for the quarters covered by this report and did not identify any unusual trends.

Dungeness B

Dungeness B has submitted Environmental Monitoring returns in line with requirements of the environmental permit. We are in the process of reviewing the environmental monitoring returns and will update the SSG if we identified any unusual trends.

Further information

Further information on our role in regulating the use of radioactive substances and related activities on nuclear licensed sites can be found on the Environment Agency section of the GOV.UK website (www.gov.uk/topic/environmental-management/nuclear-regulation)

The Environment Agency's Lead Regulator for the Dungeness A site is Phil Fahey. The Environment Agency's Lead Regulator for the Dungeness B site is Eddie Osondu.

Eddie and Phil are Nuclear Regulators and part of the Nuclear Regulation Group South (NRG South) based at the Environment Agency's Wallingford office in Oxfordshire.

NRG South Nuclear Regulators undertake environmental regulation of radioactive substances on nuclear licensed sites in southern England. They work closely with the local Environment Agency teams in those areas as well as external bodies such as the Office for Nuclear Regulation.

Dungeness A:

Phil Fahey

Telephone: 020 30259732

E-mail: phillip.fahey@environment-agency.gov.uk

Dungeness B:

Eddie Osondu

Telephone: 020 30252981

E-mail: eddie.osondu@environment-agency.gov.uk