Environment Agency Report to the Dungeness Site Stakeholder Group

November 2021

Introduction

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

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.

We undertook a solid low level waste inspection at Dungeness A on 26th July 2021. On 27th July 2021, we conducted an inspection of the environmental monitoring programme. Dungeness B undertake the programme on behalf of both sites. We visited Dungeness B regarding the arrangements for both sites and observed some strandline monitoring. On 14th and 15th September 2021, we held meetings with the Operator, jointly with ONR (Office for Nuclear Regulation).

We attended Dungeness B to conduct two inspections and participate in the annual review of safety on 27th July 2021, 19th-20th October and 2nd-3rd November 2021 respectively.

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:

During the inspection on 26th July 2021, we discussed an Environment Agency project which looked at the way low level waste is managed at nuclear sites across the country. We wanted to see how the Operator at Dungeness A was performing against some of the recommendations outlined in the project report. We made some further recommendations that the Operator is working through to ensure that they are managing waste according to the report's findings. One of these is how waste is managed using the LLWR (Low Level

Waste Repository) contract, ensuring optimised disposal routes are chosen and demonstrating best available techniques are being used. The Operator is discussing this with LLWR to ensure these are covered in their arrangements.

The Operator submitted to us a revised environmental monitoring programme for our review in July 2021. We made some comments on their proposed reduction in sampling and monitoring now that the pond, the main source of aqueous waste on site has been drained. We made some further recommendations for the programme going forward after our inspection on 27th July. We want to ensure that the environmental monitoring is proportionate and reflects the sources and speciation of radioactive discharges that the site may be able to make and also retains reassurance for the public and the environment. We are in discussion with the Operator to ensure this happens. We have commented that the programme should not be reduced as much as the Operator has suggested whilst more data is collected over time to justify further reductions. We will be having further discussions with the Operator and looking at additional justifications for the proposed new monitoring and sampling regime to agree a way forward. In the meantime the programme will remain as it is at the moment.

On 14th and 15th September 2021 we visited site to discuss arrangements for the GRR (Management of radioactive waste from decommissioning of nuclear sites: Guidance on Requirements for Release from Radioactive Substances Regulation) with the site and Magnox corporate teams. The Operator must complete a waste management plan and site wide environmental safety case as part of the GRR by end of 2023.

During the visit, we (jointly with ONR) briefly inspected arrangements for modifications and impacts on project delivery. We found them generally fit for purpose. We were also shown some of the areas that will be required for the 'boilers down project' and discussed some of the logistics. We will be engaging more with the Operator on this in the future.

We also discussed with the Operator and ONR progress on the requirements to perform further characterisation of pond skips (see below).

Response to COVID 19.

We are still maintaining contact with the Operator on a regular basis. We have regular updates on the COVID situation at site.

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.

We are in discussion with the Operator on waste acceptance criteria and environmental performance criteria for the MAETP.

The Operator has made an application for a permit variation to allow aqueous waste from the reactor voids to enter a discharge route direct to the surface water drains (see below). Our national permitting service (NPS) are still determining this application. We will be in discussions with the Operator to understand what monitoring will be in place before this route is used (if the permit is granted by NPS).

Engagement with the Operator regarding the turbine hall void.

We continue to liaise with the Operator on this project. We are working on a local enforcement position to allow the pumping of the turbine hall void to stop. At the moment the voids are pumped to prevent high pH leachate from entering groundwater. The Operator has been able to show to us that stopping pumping will have a low environmental impact when all factors are considered and will allow the turbine hall void to be infilled to support the placement of the crane to enable the 'boilers down project' to go ahead. 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. We are also liaising with Natural England on our position.

We are working with the industry as a whole to ensure that the recognition of the importance of managing site based activities to protect groundwater and ensure safe management of conventional wastes is central to any decisions on decommissioning of sites.

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 will need a further variation to their water discharge permit to enable this water to be removed and disposed of as the pH of this water is high.

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 and programmes and upcoming Regulator inspections.

Quarterly we have larger strategic meetings (last 15th September 2021) where we discuss future strategies and lifetime plans for the site, waste projects and various other 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 are in discussion regarding monitoring of gaseous waste at site following issues found in the Dungeness A medium active laboratory and the reactor lug vaults. We have 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. We are waiting for the Operator to upgrade this probe and perform a comparison of gaseous discharges to understand what this means for the accuracy of gaseous discharge reporting from this area. We do not expect any issues with permit limits as the discharges from this area have been reported as very low. However there may be some non-compliances with the permit concerning the accuracy of measuring gaseous discharges that we will look at once we receive the required reports.

On 15th September 2021 we were in discussion with the Operator and ONR regarding the pond skips stored at site. The Operator has demonstrated that the skips currently stored will have to go through a further programme of characterisation involving more sampling. Previously, at several Magnox sites a generic fingerprint was used to inform the characterisation of the skips. Magnox has determined on review, that there was not

sufficient data available to be able to calculate this generic fingerprint. The Operator needs this characterisation to adequately demonstrate best available techniques. This will also feed into what the best option for disposability of the skips will be i.e. follow the present strategy of encapsulation in robust concrete boxes at Hinkley A or consider another option for disposal. We are in discussion with the Operator and ONR regarding how this characterisation will be undertaken, what it means for disposability and what other secondary wastes may be generated from the programme of sampling. We have asked our contractors to perform some waste quality checking of the process that has been carried out by Magnox so far. We often ask contactors to look at various processes involving waste at nuclear sites. As this issue affects not just Dungeness A but several other sites (e.g. Sizewell A and Oldbury) we believe further specialised scrutiny is warranted.

Dungeness B

Radioactive Substances Regulation

Site Inspections

On the 27th of July 2021, we conducted an inspection of the Dungeness B (DNB) Environmental Monitoring Programme (EMP). The objectives of the inspection were as follows:

i. Investigate the factors that caused the lack of Quarter 1 (Q1) (2021) herbage sample results for the sampling location EBHN01 (Dengemarsh).

ii. Review the process employed to handover the EMP to the new coordinator

iii. Review previous inspection findings

iv. Discuss possible changes to the EMP in light of findings from the CEFAS (Centre for Environment Fisheries and Aquaculture Science) 2019 Habits Survey

v. Review the DNB EMP monitoring/sampling/analyses approach

vi. Conduct a plant walk down to inspect the new gamma spectrometers (at the District Survey Lab) and observe a demonstration of strandline monitoring.

We did not identify any permit non-compliance during the inspection. Regarding the lack of Q1 (2021) Dengemarsh herbage sample results, Environmental Safety Group (ESG) confirmed that an insufficient sample volume and suspected exposure of the gamma detector to a calibration check source produced false analytical results. ESG notified us of these events as required by the permit and confirmed they will not include the invalid results in the Q1 (2021) EMP returns. The station reported analytical results for all other EMP sample locations and has taken action to prevent a recurrence of these events.

We confirmed that DNB has fully implemented the recommendations from our previous EMP inspection in 2019. The station's overall approach to monitoring/sampling/analyses was satisfactory and we found no issues during the plant walk down. However, we recommended that ESG update the station's EMP document taking into account changes identified in the CEFAS 2019 Radiological Habits Survey Report.

On the 19th and 20th of October 2021, we conducted an Asset Management inspection at DNB. We reviewed the performance and maintenance of the following environmentally critical plant:

i. Active Effluent Water Treatment Plant (AEWTP)

ii. Gaseous Sampling Cubicles

iii. Heating & Ventilation (H&V) Plant

Our objective was to check that adequate arrangements/measures are in place to maintain the above plants in good repair before, during and after the defueling period. We did not believe DNB was in breach of any relevant permit conditions during the inspection. The above plants appeared to be in good working order with ongoing work and investment to improve their performance. We are in the process of reviewing additional asset management information provided by DNB post inspection. Following our review, we will produce an inspection report, incorporating evidence gathered during the site inspection. We will provide further update to the SSG only if we identified significant areas of concern from our ongoing review of additional information.

Events and Enforcement

Dungeness A.

Nothing to report.

Dungeness B

Nothing to report.

Annual Review of Safety and Environment

On the 2nd and 3rd of November 2021, we attended the Annual Review of Safety (ARoS) at DNB for an update on the station's safety (including environmental safety) performance during the period 1st April 2020 to 31st March 2021. The station's environmental safety performance was satisfactory during the period under review with no permit breaches recorded.

We noted good housekeeping during the plant tour, but identified minor solid waste minimisation and segregation issues. We recommended that ESG reinforce the waste awareness drive in order to improve waste management practices across the station.

Environmental Permitting

Dungeness A

Radioactive Substances Regulation

Water discharge permit

Our National Permitting Service (NPS) are determining a variation to add the discharge from the turbine hall void water to the permit. We have determined that this water which is discharged to sea needs to be included. This application is also considering the proposal to discharge waste from the reactor voids to the surface water drains (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 the gaseous and liquid waste discharge returns required to us. We have reviewed discharge returns covering the period April to June 2021 and did not identify 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 quarters 1 and 2 of 2021 and did not identify any unusual trends. We are still awaiting results of strontium 90 from the Operator for quarter 2. There have been issues with the external laboratory used when performing this analysis.

Dungeness B

Dungeness B has submitted Environmental Monitoring returns required to us. We reviewed the environmental monitoring returns for the period January to March 2021 and did not identify any unusual trends.

Radioactivity in Food and the Environment (RIFE)

Nuclear sites are required to carry out a rigorous environmental monitoring programme that requires the operator to monitor and assess the impact of their discharges on the environment.

In addition, the Environment Agencies and Food Standards Agency carry out independent environmental monitoring around nuclear sites. The results of this work are published in our annual Radioactivity in Food and the Environment (RIFE) report.

In the RIFE report, the Dungeness sites are considered together for the purposes of environmental monitoring because the effects of both are on the same area. The report presents a yearly assessment of radiological dose to the group of people in the local population who are most exposed to radiation from the sites. In the latest report for 2020 (RIFE-26), the total radiation dose to this group of people as a result of discharges and radiation shine from the sites was very low at 0.012 mSv. This is approximately 1% of the Government dose limit of 1 mSv/year and an even smaller percentage of the average amount of radiation we all receive from natural sources, which is approximately 2.2 mSv/year.

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.

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