Environment Agency Report to Dungeness Site Stakeholder Group

May – September 2016

Introduction

This report covers the Environment Agency's regulation of Dungeness A and B sites and related environmental matters.

Nuclear regulation

Phil Fahey is the lead regulator for the Dungeness A site. Andrew Stone is the lead regulator for the Dungeness B site.

Phil and Andrew both work in the Nuclear Regulation Group (South). Officers from the Kent Area Environment Agency team also visit the site for general environment protection matters such as groundwater, contaminated land, waste management and water abstraction.

We work closely with other regulators such as the Office for Nuclear Regulation (ONR) in areas of common interest.

Attendance at site

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 making regular inspections. These are recorded on Compliance Assessment Reports which detail our inspections and any non-compliance found; they are placed on our Public Register.

We visited Dungeness A on 5 July, 1-3 August and 20 September 2016.

We also attended the Magnox South East sites annual review of safety, security and environment on the 25 May 2016 jointly with the Office of Nuclear Regulation (ONR). This meeting reviewed the performance of Dungeness A, Sizewell A and Bradwell over the previous year.

On 28 July 2016 we attended by teleconference a new meeting for the South East Magnox sites on waste strategy and permissions. These meetings between ourselves, ONR and Magnox will be held on a regular basis with items of mutual interest being discussed. The next meeting is due to be held in November.

We visited Dungeness B on 28-29 June and 21 September 2016. We attended the Dungeness B Annual Review of Safety and Environment on 4-5 May. We attended the Dungeness Emergency Planning Consultative Committee meeting on 2 September.

Regular contact is also maintained with the sites by telephone and email in addition to formal correspondence.

Discharge reports

Both sites are required to report to us liquid and gaseous discharges to the environment and transfers of radioactive waste to other sites on a regular basis. These reports are placed on the public register. Liquid and gaseous discharges from both Dungeness sites remain within the limits set by the Environmental Permits. Historical data is available via the Environment Agency 'What's in your backyard?' service.
https://www.gov.uk/check-local-environmental-data

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 are slightly different to reflect the radionuclides that are being discharged, the historical discharges and the operational activities taking place at each site.

In addition to the Operators' environmental monitoring programme the Environment Agency participates in an independent UK-wide monitoring programme. The results of these monitoring programmes are published annually

and are used to assess the dose received by members of the public in the vicinity of nuclear licensed sites. Radiation doses to people living around nuclear licensed sites from authorised releases of radioactivity were well below the UK national and European limit of 1 millisievert per year in 2015.

Current regulatory issues

Dungeness A

Inspections

Following on from various issues that have occurred on site including the discrepancy over gaseous discharge reporting mentioned at the last SSG meeting and failures of sampling equipment, we asked the Operator to perform a review of environmental performance. This was held with Magnox central and 20 actions came out of this review. We discussed these outcomes with the Operator on our July visit. The Operator will be working over the next few months to complete the outstanding actions. A review will be undertaken to establish progress.

One of the actions was to review the spreadsheets used to calculate discharge data from site. Subsequently we were notified in August 2016 that the spreadsheet that has been used for gaseous discharges from mobile extraction units had an error. This meant that the discharges from these units have been overestimated since the spreadsheet was introduced in 2011. We discussed this with the Operator at a meeting on 20 September. As no permit limit was breached and the Operator found this out following their own environmental review, we decided not to take any enforcement action on this occasion. We have already taken action following errors in discharge reporting (see below) and we are interested in continual improvement in performance following the recent findings. The levels of radioactivity involved in the errors are low.

In August we carried out a joint inspection with ONR on radioactive waste management. There were some recommendations but no non-compliances. The Operator is making good progress with recommendations from previous inspections. All actions are now on the event action tracking system which assists the Operator with monitoring progress.

Gaseous discharge reporting.

Following the clerical errors in gaseous discharge reporting that we reported to the SSG at the last meeting, we identified 2 non-compliances to the permit. The first was a failure to report accurate information regarding disposals of radioactive waste and the second was a failure in the Operator's management system. New staff had taken over the reporting of the discharges from the mobile extraction units and the change control process in the management system was not sufficient to ensure that there were no errors introduced by the change in process. The Operator has introduced changes on site to prevent a reoccurrence.

Both of the breaches are classed as category 4 non-compliances as there was no environmental impact as a result. Our enforcement response was to give advice and guidance. The breaches are logged on our compliance classification system.

Wrong valve placement in active effluent water treatment plant

We reported at the last SSG meeting that due to an incorrect configuration of a non-return valve, active liquor was found to be overflowing from an active drainage trench following routine pumping out of voids. We investigated this event but found no non-compliances to the permit. The Operator's own review has looked into causes and preventions.

Treatment of Bradwell Fuel Element Debris

In August 2016 we received a proposal from Magnox to transfer some of its stock of Bradwell fuel element debris (FED) to Dungeness for dissolution in the Dungeness plant (known as the MXD plant).

As part of an overall strategy to dispose of this material, Magnox has proposed that a further 23 tonnes of FED is suitable for being treated in the MXD plant. A similar amount of Bradwell FED

was successfully treated at Dungeness in 2012/ 2013.

The proposal involves upgrading the sand pressure filter in the MXD plant to provide the same standard of abatement of radioactivity that is achieved at Bradwell.

Magnox will be developing environmental performance indicators for the abatement of discharges and we will review these plans to ensure that any discharges made are in line with best available techniques.

We have agreed Magnox can initially carry out a trial using around 3 tonnes of FED before the end of the year to demonstrate the capability of the MXD plant. The discharges will be monitored and if the trial is successful the MXD plant will be able to be used to continue treating more Bradwell FED.

Changes to CEAR (Compilation of Environment Agency Requirements)

A new shielded radioactive waste store has been constructed following an evaluation of options by the Operator. This store will be used for temporary storage of Ionsiv filters and pond skips within suitable containers before transfer to a buffer store at Hinkley Point in 2017. The Ionsiv filters will discharge a very small amount of tritium gas whilst in storage.

Gaseous discharges from the new store will be classed as a minor route. Minor routes are defined as releasing less than 1% of the total site discharge allowed by the permit. In reality the discharge from the store will be well below the 1% limit (kilobecquerel quantities). To permit this new minor gaseous discharge route a change in the CEAR was made to include the new store.

Dungeness B

Inspections

Our routine inspections during this period have focussed on management systems, gaseous radioactive waste discharges, environmental monitoring, low level waste and transfers of solid radioactive waste to other premises.

Gaseous radioactive waste discharges to the environment

We have reviewed the trends of radioactivity discharged to air from the reactors and associated facilities. The amount of tritium discharged to air was higher in 2015 than in 2014 because the power station generated for longer periods.

A general increase in sulphur-35 discharged to air has been observed over the past 12 months. This is currently at about 20% of the annual limit. This is mainly due to the injection of carbonyl sulphide (COS) in to the reactor gas circuits in order to mitigate the effects of carbon deposition on internal reactor components. COS injection in to both reactors commenced in 2014.

The station will continue to keep the discharges under review as part of using best available techniques to minimise discharges to the environment. No limits or notification levels have been exceeded.

Environmental monitoring

The station reported that a grass/herbage sample from one of the monitoring sites (Coast Guard Cottages) taken in the spring showed a slightly elevated level of sulphur-35 at 25.3 Bq/kg. This was not from land that can be used for pasture.

Seasonal variations in environmental uptake by plants are often seen during periods of active growth. This is predicted to occur by the modelling of radioactivity in the environment that we use to estimate radiation doses to people and wildlife.

Low concentrations of sulphur-35 have been positively detected in some environmental samples in previous years. The dose to a high-rate consumer of locally grown foods has been estimated to be less than 0.005 millisieverts per year *(Radioactivity in Food and the Environment, 2015*).

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