Environment Agency Report to Dungeness Site Stakeholder Group

October – December 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.

Radioactive Substances Compliance Assessment Reports (RASCARs) detailing our inspections and any non-compliances found are placed on the Public Register.

We also regulate and control other activities through our environmental permits, including discharges to sea and emissions to air from emergency diesel generators and boilers. We are also the joint technical authority, alongside the Health & Safety Executive for the Control of Major Accident Hazard (COMAH) regulations that apply to Dungeness B.

We visited Dungeness A on 26th October and 21st and 22nd November 2016.

On 3rd November 2016 we attended the South East Magnox sites waste strategy meeting. These meetings between ourselves, ONR and Magnox are held on a regular basis with items of mutual interest being discussed that concern Dungeness A, Sizewell A and Bradwell.

We visited Dungeness B on 18th October, 14th November and 6-7th December 2016.

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 1000 micro Sieverts (µSv) per year in 2015.

Current regulatory issues

Dungeness A

Inspections

We had a catch up and Bradwell fuel element debris (FED) meeting at Dungeness on 26th October. We discussed performance indicators and best available techniques for the proposed 72 drum trial (see below for FED update).

On 21st November we had a catch up with the Operator on progress with the environmental review and inspection actions. We also discussed progress with decommissioning on site. Progress on all matters discussed appeared satisfactory.

On 22nd November we performed an inspection on the progress of ponds decommissioning. There were no non-compliances noted from this inspection.

Treatment of Bradwell Fuel Element Debris (FED).

Due to the improved performance of the Bradwell dissolution plant, it has been decided by Magnox that the transfer of FED to Dungeness will be placed on hold. The Dungeness dissolution plant will now only be used if the Bradwell plant is subject to a significant breakdown.

We will be liaising with the Operator to ensure that if the Dungeness plant is required, the operation and any associated discharges or waste generation will follow best available techniques.

Dungeness B

Inspections

We carried out an inspection of the combustion plant at the power station in October. The combustion plant comprises a number of small diesel engines and boilers ranging from 50 kW to 14 MW thermal input. With the exception of two small propane burners the plant burns distillate fuel oil. The majority of the plant provides back-up to systems on the power station and usually only operates for short periods for testing purposes. EdF holds an Environmental Permit to operate and make discharges to the environment from this plant.

During the inspection we examined the operating techniques, accident management plan, monitoring and emissions, maintenance and the groundwater monitoring programme. Various improvements are planned to the emergency diesel generators and their control and instrumentation systems. Some changes to the testing regimes of the diesel generators is planned in the future. There were no non-compliances noted from this inspection.

During December we carried out an inspection of the records and equipment used for monitoring low level radioactive waste that is sent to other sites for treatment or disposal. The station has made progress in reducing the amount of ventilation system filters that have to be sent for incineration as radioactive waste. There were no non-compliances noted from this inspection. There is a company wide review of the instrumentation used for monitoring drums of radioactive waste.

During December we carried out an inspection of the district survey laboratory at Denge. The laboratory holds some low activity radioactive sources used for calibrating radiation detection instruments.

Surface water drains

EdF notified us and the ONR that elevated levels of tritium had been detected in groundwater from a borehole on the eastern side of the site. Boiler condensate from the dump water storage tanks is likely to be the source. This contains tritium at a concentration of about 600 Bq/l and is discharged routinely to sea via the surface water drains.

A camera survey of surface water drains has revealed a leg of the drainage system where the drain liner has degraded. The affected leg has been temporarily blocked and discharges of boiler condensate are being made at a lower flow rate. A permanent repair solution is being engineered as part of ongoing improvements to the site infrastructure. We are liaising with the ONR which regulates the escape of radioactive waste on the

site under the Nuclear Site Licence and attend joint meetings to review the outcomes of the investigation.
Groundwater samples from borehole 109 are currently showing declining tritium levels, currently at around 90 Bq/l. The background concentration on and off-site is around 50 Bq/l.

Tritium is a radioactive isotope of hydrogen and combines with oxygen to form tritiated water. It is low in radiotoxicity; it is very mobile in the environment where it can become diluted. Its half-life is 12.3 years. The EU has recommended a screening value of 100 Bq/l in drinking water where it would be appropriate to trigger an investigation in to the source. The World Health Organisation has set a drinking water guidance level of 10000 Bq/l to ensure the protection of the public and the environment.

Other News

Publication of RIFE Report

The annual 'Radioactivity in Food and the Environment' (RIFE) report presents results of the national monitoring programmes conducted by the Environment Agencies and the Food Standards Agency. These monitoring programmes support our regulatory function and provide a check that public radiation exposures are within legal limits. The report was published on 26 October 2016 and can be found here:

https://www.gov.uk/government/publications/radioactivity-in-food-and-the-environment-2015-rife-21

This is the 21st edition of RIFE containing information on radiation exposures (doses) to the public and radioactivity levels in the environment during 2015. It covers locations near to nuclear fuel production and reprocessing sites, research establishments, nuclear power stations, defence establishments, radiochemical production, industrial and landfill sites, and non–nuclear sites. It also reports on regional monitoring away from these sites, which provides data on background radiation levels.

The report for 2015 shows that total doses to the public, from permitted discharges and direct radiation around nuclear sites, remained well below the legal limit of 1000 µSv per year.

The units for measuring radiation dose is the Sievert (Sv); 1 Sv is a very large dose. A more convenient unit to use is micro Sieverts (µSv) and 1 µSv is one-millionth of a Sv (0.000001 Sv).

At Dungeness, results showed that total radiation doses (from all pathways and sources of man-made radiation) were similar in 2015 to those reported in 2014:

14 µSv in 2015

21 µSv in 2014

For comparison, a typical chest x-ray gives the patient a radiation dose of around 100 µSv and a dental x-ray around 5 µSv.

Flood awareness

We launched our winter 2016 flood awareness campaign in November, encouraging people and communities to take some simple actions to prepare themselves for a flood event.

The winter floods of 2015/16 caused flooding to over 20,000 properties. Repairs to the damage caused by flood water from the floods cost on average £50,000 per domestic property (source ABI).

Taking three simple actions could help:

1) **Think** - know if you're at risk from flooding
2) **Feel** - understand the action you can take to protect your home and business
3) **Do** - take action to protect lives, reduce risk and increase resilience

Communities are more resilient to flooding when they work as a team. Having a community action plan to help people work together in times of crisis can reduce the local impacts of flooding. Find out more from your local Flood Resilience Engagement Officer.

Creating a flood plan doesn't take long, and is proven to help during emergency situations. Download a template for your home or business from our website and get yourself prepared for flooding. https://floodsdestroy.campaign.gov.uk/

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