



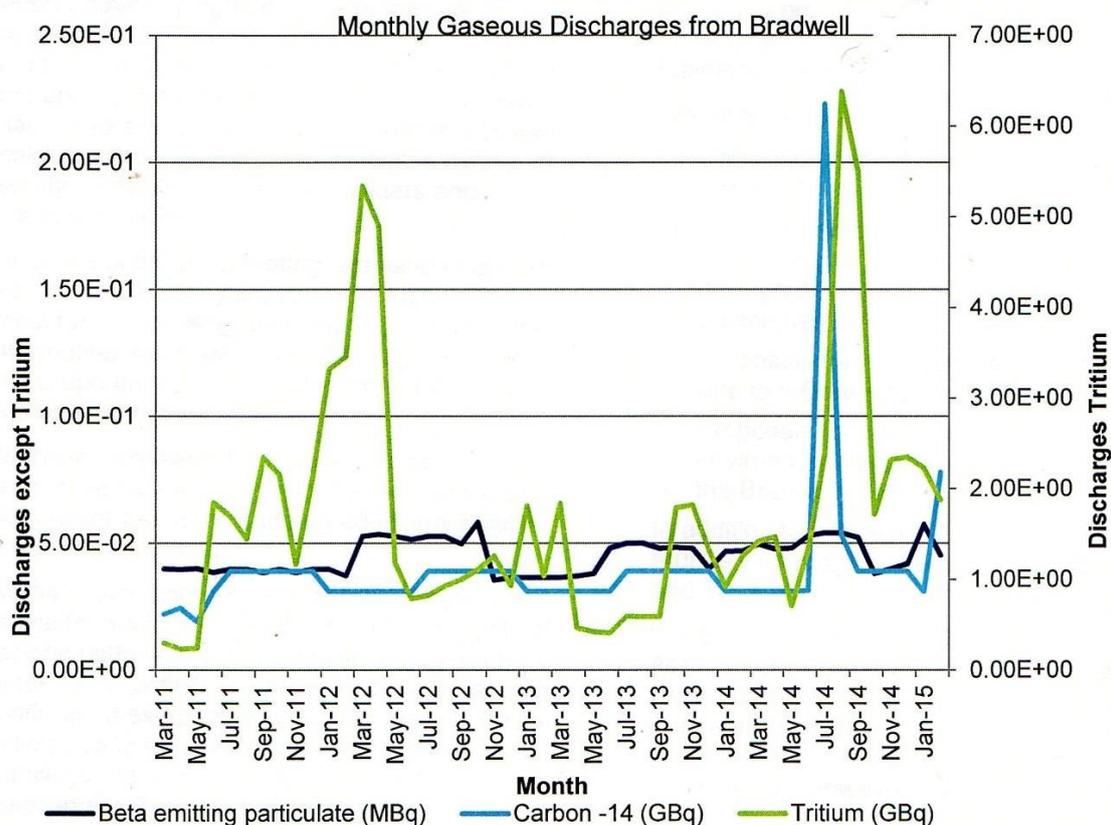
Responses to questions tabled in advance of the Bradwell LCLC 14 December 2016

Q1 Why do Magnox want an open ended agreement to pump FED into the estuary, instead of a fixed end date of 1 or 3 or 5 years time?

A1 We do not pump FED into the estuary, what is discharged is a liquid effluent which has been treated and contains only trace levels of metals and radioactivity.

Magnox does not want an open ended agreement, instead of using duration to constrain the agreement a limit has been placed on the total nitrate to be discharged. In other words, we have an environmental impact limit, as opposed to a fixed end date. This limit has been set using the amount of FED on site left to be dissolved, in other words the inventory on site. The reason that this is preferable to a time limit is because there may be occasions where the FED dissolution has some shut down time, for various reasons e.g. routine maintenance. It is therefore better to have an agreement that is limiting our environmental impact as opposed to how long we can run the project.

Q2 I ask that in order to help questioning at the LCLC if the EA could be asked to bring their earlier graph (attached and as provided at the mid 2015 LCLC) forward to the nearest available date eg of C14 and H3 and other radioactive emissions to the air and to provide commentary on it ie reasons for the spiked emissions, significance and effect of them and 12 month cumulative emissions ie area under graph together with projected environmental fate of these emissions eg if H3 is absorbed in rainfall, etc





A2 It is worth noting the scale of this graph. Our limit for tritium for example is 6,000 GBq, so if this graph was given to an appropriate scale then the discharges would all be constantly around the baseline. The y axis given reflects 1/1000 of the limit. When the graph is magnified to this extent it leads to false impressions of extreme spikes when in actual fact this could be due to changes in minimum detectable amounts as opposed to changes in discharge levels.

An updated graph was provided in the EA presentation at the last LCLC

Q3. "Why have NO precautionary, safety limits, other than total daily volume and pH, been set for the emissions and monitoring of point source emissions of A2, A3 & A4 'trade effluent' waters, thereby creating a potential risk of accretion of heavy metals and/or dangerous trace elements within the Blackwater estuary?"

A3. For effluent route A2 which is an active effluent route, there are no metal limits as there are very low levels discharged. These levels have been demonstrated and put in the application for the permit. We will be required to do spot samples in order to monitor these discharges and demonstrate the metals are at the level that we stated in our application.

Effluent route A3 is from our main drains pit which receives rain water and water from our reverse osmosis unit. There is therefore no source for pollutants, meaning there should be no metals in the effluent. We will be required to carry out instantaneous monitoring in order to check this.

Route A4 is the treated sewage which contains organic matter. The permit will put in place the limits appropriate to monitoring organics. These limits are on the Biochemical Oxygen Demand (known as BOD), suspended solids, and oil; other limits would not be relevant to this effluent which is not inorganic.

Q4.1 What quantity of FED remain for processing?

A4.1 There are less than 70 tonnes of FED left which could be processed at Bradwell. As mentioned during the LCLC meeting, we believe that a large quantity of this FED is Low Level Waste and suitable for disposal at the Low Level Waste Repository in Cumbria.

Q4.2 There is a lack of easily accessible data for the discharges, will you undertake to publish on a single web page (that is easy to find) all the test results conducted for gas and liquid discharges on a weekly basis?

A4.2a The information is available on the EA web portal and is on the public register at this web address: <https://ea.sharefile.com/d-s9822215ebc94f5a9>

We produce our statutory returns on a quarterly basis as is stated in the permit. It would not be possible for us to release this data on a weekly basis as the samples have to be prepared and analysed, following this calculations have to be done and then verified. This process cannot be done within a week.

Q4.2b Will you also undertake to publish on the same web site all the events that have to be reported to regulators including leaks within 24 hours of regulators being notified.



A4.2b As is required by our permit, events are reported within the appropriate time to the Environment Agency. However, we would not be able to commit to releasing this information into the public domain in this time frame as we would need time to fully investigate an event.

Q4.3. As a corporation, do you believe in the principle that the 'polluter pays'?

A4.3 This is not a principle of belief but is enshrined into relevant UK legislation.

Q4.4 Many people remain extremely concerned about the discharges and their effect on public health and the marine environment. Will you agree to fund the local community to contract a suitably qualified University or organisation to collect, test and report on additional monitoring samples of the seabed sediment and water in the immediate area of the outflow pipe?

A4.4 Magnox already pay for a district survey programme to carry out an environmental monitoring programme and the Environment Agency also conduct a separate, independent programme, the results of which are released in the Radioactivity In Food in the Environment report (RIFE), the most recent of which being RIFE 21.

Q4.5 The statement from Scott Raish at the December 2016 LCLC meeting that it was the intent to transfer low level FED waste from Bradwell to Dungeness. This conflicts with The Closure Directors Report from Dungeness stating that it will not be processing any of Bradwell's waste?

A4.5 At the Bradwell LCLC it was stated that Magnox was looking at the option of Fuel Element Debris waste from Bradwell being processed at the Dungeness dissolution plant. However, since that time and as a result of the significantly improved performance of the FED plant at Bradwell in recent months, a decision has been made to continue to dissolve all FED at Bradwell. Dungeness will continue to have its dissolution plant on standby until such time that we are assured of success at Bradwell for dissolving all the remaining FED.

As also stated during the LCLC meeting, we believe that a large quantity of this FED is Low Level Waste and suitable for disposal at the Low Level Waste Repository in Cumbria, which will bring forward the Care and Maintenance date for the site. The FED which had been potentially destined for processing at Dungeness that will now be processed at Bradwell cannot be disposed as Low Level Waste. Continuing dissolution at Bradwell will not impact on our ambition to bring forward the date that the site enters Care and Maintenance.

Q4.6 What happens now to the waste from Sizewell due to come to Bradwell via Dungeness with the closure of FED processing at Dungeness?

A4.6 Waste from Sizewell has never been destined to go to Dungeness. A small number of Intermediate Level Waste packages will be transferred from Sizewell to Bradwell, in line with our regional waste storage plans. This waste has never been destined to be processed through either the Dungeness or Bradwell FED dissolution plants and will be transferred straight to the Interim Storage Facility at Bradwell.



Q5.1 When was planning permission given for the new pipework to be installed?

A5.1 There was no planning permission required for the installation of the new pipework as it is not a new structure, it runs through the existing structure.

Q5.2. Can you explain why no regular monitoring occurs with the immediate proximity of the outflow pipes?

A5.2 There is monitoring done both pre and post discharge therefore we know what each discharge contains. The environmental monitoring programme also monitors the discharge once in the estuary. The locations of the samples can be seen on the maps below which show sample locations for silt and for seaweed.

Q5.3 How far from the outflow pipes are water samples taken from testing, how many, how often and by who?

A5.3 Again please see the maps for our sample locations. The sea water sample that we take is from SL/E6 on the silt map. Fish samples are not taken from a set location and the oyster locations are not known by Magnox as this is commercially sensitive information. This covers all sampling locations for our aquatic monitoring programme. The samples are taken quarterly through an accredited contractor. It should be noted that the Environment Agency run their own independent programme and take independent samples both for their own monitoring of non-radioactive metals and for the production of the Radioactivity in Food and the Environment report. The location of EA sample sites can be seen in the environmental monitoring presentation which was presented at the last LCLC.

Q5.4. How far from the outflow pipes are sediment samples taken for testing, how many, how often and by who?

A5.4 Please see the map below that relates to silt sample locations. The Magnox samples are taken by an accredited contractor and are taken quarterly. As with the other samples, the Environment Agency also conducts its own independent monitoring programme.

The location of EA sample sites can be seen in the environmental monitoring presentation which was presented at the last LCLC.



Seaweed sample locations





Silt Sample Locations n.b. the seawater sample is taken from SL/E6

