

**WRITTEN QUESTION TO THE MINISTER FOR PLANNING AND ENVIRONMENT
BY THE DEPUTY OF ST. MARY
ANSWER TO BE TABLED ON TUESDAY 6th JULY 2010**

Question

“Will the Minister confirm the exact date of the discharge permit for the water outflow from the JEC power station, and any renewals and alterations to the permit?”

Will the Minister give exact details of this permit:

- What substances were permitted to be used and discharged?
- In what quantities?
- What the maximum permissible levels of each chemical in the discharge were?
- How any possible damage to the marine environment was assessed when the permit was granted, and whether that assessment has been revised in the light of more recent knowledge?
- Whether the marine environment was treated as one entity or whether the effects of the chemicals on ecosystem components were assessed?
- What monitoring methods are used?
- Who monitors the discharge, at what intervals, and is this monitoring independently verified?”

Answer

According to Article 21 of the Water Pollution (Jersey) Law 2000 (The Law) any person other than the Minister who wishes to make an introduction into controlled waters that would otherwise be in contravention of Article 17 (1), shall first apply to the Minister for a discharge permit.

The JEC Power Station discharged treated cooling water prior to the implementation of the Law. Jersey Electric therefore applied for and were granted permission to discharge under a deemed permit. The deemed permit was issued on 14th December 2000 in accordance with the transitional arrangements of the Law.

The deemed permit was determined and became a fully conditioned discharge permit on 18th May 2010. Prior to the determination, considerable work was undertaken to quantify the exact constituents of the discharge and where possible to remove them from the discharge. Only after this process, could an effective (and enforceable) discharge permit be drafted which accurately identified and conditioned each constituent of the discharge/activity.

The permit specifies that the discharge shall consist of solely:

- a. sea water that has been used for cooling purposes and may have been treated with necessary biocides to prevent fouling.
- b. sea water that has been used for cooling auxiliary oil or lubrication systems.
- c. surface water run-off that is likely to be contaminated with oil.
- d. surface water run-off that is not likely to be contaminated with oil.

The discharge permit specifies that the discharge:

- i. shall not exceed 6,820 litres per second.
- ii. be no more than 19⁰C higher than the temperature of the sea water at the point of intake
- iii. contain no more than 0.05 milligrammes per litre of total amines and 0.05 milligrammes per litre of residual halogens.

The discharge permit allows for the regulator, Environmental Protection, to specify strict conditions for monitoring and reporting protocols of the discharge. These include the keeping and inspection of such sampling records and the reporting of maintenance or planned work to the power plant.

The discharge permit for the JEC follows latest UK best practise by requiring self-monitoring by the operator (JEC), with the regulator carrying out audit sampling and inspection of records by the regulator to ensure that the self-monitoring is robust and that the discharge complies with the relevant conditions as laid down within the permit.

According to the permit the JEC must maintain a record of the composition and quantity of chemicals used to treat the discharge. The Permit states that any proposed changes to the chemicals used in the discharge (for example the type of biocide used) must be notified in advance to the Regulator (Environmental Protection). As such, any change in the nature of the discharge may require a variation to the permit and be subject to full consultation.

To answer the Deputies question relating to possible marine damage, officers from Environmental Protection with support from UK consultant carefully considered several points when granting the permit, these include:

1. The conditions detailed within Discharge Permits need to take into account the maximum flow volumes, temperatures and chemicals. For example, the specification of 19°C temperature uplift and the flow rates given would probably only occur during a total failure of all interconnectors with France and the Power Station had to run at full generation output. Under normal operation conditions the flow rate and temperature uplift would be far lower, especially during periods of non-generation.
2. Since the date of issue of the deemed permit, the output and operation of the power station has markedly reduced following the installation of interconnectors with the French network. The average flow rate of cooling water and the temperature uplift, required by the plant, which is mainly operating below capacity has therefore much reduced.
3. Biocides are designed to be toxic. Biocide is needed to kill marine growth that would otherwise attach itself to internal pipework and ultimately cause disruption of the Island's power supply. Biocides work by coating surfaces of pipes etc over which it flows. The dosing rate at the intake is kept to the absolute minimum and is governed by the fact that when the discharge leaves the end of the cooling pipe, the biocide has effectively been 'coated out'. This is evidenced by the fact that marine life still exists close to the discharge point. The discharge permit has conditioned the final concentration to be just above the detection point (it can therefore be measured and any exceedences actioned against).
4. The biocide is added to the inflowing cooling water at a rate of approximately 0.57 litres every 12 hours. In this time period up to 147,300 cubic meters of sea water (representing the maximum flow rate) will have pumped into the power plant. During non- generation this pumped rate will be reduced to approximately 6,000 cubic meters (over the 12-hour period). The large tidal flow adjacent to the pipe will further dilute this small concentration. It can be seen that the dilution factor of the biocide is large.
5. The discharge permit is designed to safeguard against pollution of controlled waters (in this case being coastal water around Jersey). It would do this irrespective of the presence of the Ramsar site.
6. A walkover survey of the discharge area showed the ecology of rock pools at the end of the discharge pipe having no visible difference to that found in rock pools in adjacent areas. There is therefore no visible impact to intertidal marine life immediately adjacent to the discharge pipe. Indeed, young sea urchins that would be susceptible to biocides were seen actively feeding directly outside the outfall grating.
7. The foreshore communities have evolved to withstand large and sudden fluctuations (such as

temperature) demanded by their habitats. For example, when the cold incoming tide covers warmed rock pools.

8. The permit contains numerous and specific conditions which Jersey Electric must comply or face enforcement action under the Water Pollution (Jersey) Law 2000. These conditions allow for effective monitoring of the discharge thus ensuring that no detrimental impact to the adjacent marine area occurs.