Centrica Barry Limited
Site Closure Plan
2019

Date	Revision Number	Reviewed By
29/4/2019	1.0	L Dolman
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1 Contents

1 Introduction

Centrica Barry notified NRW on 20/03/2019 of the decision to cease operations at Barry Power Station site covered by the Environmental Permit EPR/JP3333LV. A decision has been made to seek to surrender the environmental permit and to demolish Barry Power Station site. In line with Natural Resources Wales requirements, this document has been prepared to set out the actions that have been and will be taken on site to facilitate these aims and take the site through demolition.

1.1 Existing Site Closure Plan

A site closure plan was prepared and submitted to the Environment Agency in December 2008 in response to an improvement programme condition specified by the Environment Agency in the site Environmental Permit (permit reference number EPR/JP3333LV). The improvement programme condition, IC8, is shown below:

"The operator shall produce a written site closure plan in accordance with the requirements of section 2.11 of the Combustion Technical Guidance Note. A copy of the site closure plan shall be submitted for the approval of the Agency."

As indicated above, a decision has been made to Demolish Barry Power Station, and this document presents a revised, updated site closure plan which sets out in greater detail the actions that will be taken through to demolition.

This revised site closure plan forms part of the requirements necessary to make an application for the surrender of the Environmental Permit and is supported by other relevant documentation, including:

- Application forms
- The original Application Site Report
- The Site Protection and Monitoring Programme, associated reviews and operational records
- The Site Condition Report

This information is aimed at being able to establish the condition of the site upon the cessation of activities and demonstrate that it is in a satisfactory state for surrender of the Environmental Permit.

1.2 Site Overview

A full description of the installation and its activities is provided in section 2.1 of the PPC permit application. A site plan showing the layout of the site is shown in Appendix 1 Figure 1 and a detailed drawing showing underground pipes and vessels is given in Figure 2.

General building construction consists of 2.5m high brick and concrete block walls for the buildings, retaining and bund walls. Above this level the construction consists of steel framed, sheet steel cladding for walls and roofs. The Heat Recovery Steam Generator (HRSG) is external without a building enclosure. The facility contains 11kV buried cables together with surface water drains running through the site.

The only major above ground concrete foundation plinth is for the steam turbine which is a conventional reinforced concrete monolithic block construction. There are no significant underground structures.

The site is relatively small with resultant implications of careful planning regarding the HRSG and chimney demolitions to ensure containment within the site boundary.

The plant thermal insulation is understood to be free of asbestos and the transformer oil on site contains no PCBs.

There are no landfill sites or lagoons within the installation site boundary.

2 Site Permits and Licences

Barry Power Station operates under an Environment Permit (EPR/JP3333LV) issued by Natural Resources Wales. The Permit provides a schedule of emissions and monitoring requirements for the operational power station. During decommissioning activities, there will be no point source emissions to air from the gas turbine as operation has ceased. The relevant emission limits and monitoring requirements will be emission point W1, Surface water drainage via sump and penstock valve to Sully Brook, oil and grease with a limit of no visible emissions and pH with a limit of 6-9.

3 Operational Records

A Business Management System (BMS) certified to the International Standard for Environmental Management Systems, BS EN ISO14001, has been maintained on site throughout the period of the existing Environmental Permit to control and manage the operations. This system will be maintained in the short term pending the surrender of the Environmental Permit.

Included in the business management system (BMS) are controls and procedures aimed at managing the operations such that there should not be any deterioration of the ground and groundwater quality during the lifetime of the Environmental Permit. Incidents which occurred during the lifetime of the Environmental Permit and which may lead to deterioration in the site have been logged via the BMS and managed in accordance with the requirements of the site Environmental Permit. Records have been and will continue to be maintained, together with information on any investigation or ameliorating work carried out. This has ensured that there is a coherent record of the state of the site throughout the period of the Environmental Permit. These records together with the Application Site Report, the Site Protection and Monitoring Programme and the associated reference data collection completed at the commencement of the site PPC permit and the site condition report, provide key records to support the Environmental Permit Surrender application process

4 Plant Modifications

Environmental issues have been given due consideration in the project planning phase for new developments and engineering modifications on site throughout the life of the permit. This has included consideration at the design stage of issues that may impact on site closure e.g. by seeking to avoid underground tanks and pipework where possible (unless protected by secondary containment or a suitable monitoring programme).

Where appropriate, the outcome of these developments and modifications has been fed through to the Site Protection and Monitoring Programme and the Register of Environmental Aspects and Impacts held within the BMS.

5 Site Closure Consideration and Management

Barry Power Station ceased operation on 31st March 2019 following the end of the contract to operate in the Short Term Operating Reserve (STOR) market and a decision has been taken to surrender the environmental permit and demolish the site.

The following sections of the Site Closure Plan consider key elements associated with the decommissioning and closure of Barry Power Station.

5.1 Site Security

The demolition contractor has provided 24hour security arrangements on site, these will remain in place until completion of the demolition.

5.2 Control of Contractors

Contractor control will be assured using contracts, method statements and permits to work in line with site policy and requirements. the Construction (Design & Management) Regulations will be implemented on site during the demolition and a written Health, Safety and Environmental Policy for the revised site has been provided by the principal contractor.

Regular contractor briefings are carried out to stress the importance of maintaining good environmental performance, avoiding breaching consents or other relevant legislation and to ensuring that contractor operations are carried out in such a way as to not result in contamination of Centrica land.

5.3 Effluent, Fuels, Oils and Other Chemicals

5.3.1 Water and Drainage Management

The site effluent/ foul drains have been decommissioned following site closure with no further discharges through the site foul water drainage system. With the power disconnected the pumps cannot be used for discharge and any foul water will be tankered off site by the demolition contractor utilising specialist sub-contractors.

Storm water is collected and channelled via a series of drains prior to discharge via a penstock valve to the drainage ditch / stream outside the site's eastern boundary. This drainage ditch joins Sully Brook at a point approximately 100m south, which drains to Cadoxton River. Discharges are monitored weekly for pH and oil visibility.

5.3.2 Water Treatment Chemicals

All boiler and water treatment chemicals associated with the scheduled operations have been removed from site. This was completed by a specialist contractor and tanks, vessels and pipework have been cleaned and flushed.

5.3.3 Fuel Oil

No fuel associated with the scheduled operations remain on site. The only fuel oil present on site is associated with heavy plant and generators used by the demolition contractor and hence is outside the scope of the Environmental Permit.

5.3.4 Lubricating, Transmission and Hydraulic Oils

All oils previously associated with the scheduled operations have been removed from site.

5.3.5 Transformer Oils

All transformer oils previously associated with the scheduled operations have been removed from site.

5.3.6 Batteries

All batteries previously associated with the scheduled operations have been removed from site.

5.3.7 Miscellaneous Chemical Smalls

The laboratory and maintenance buildings may contain minimal amounts of laboratory chemicals which will be removed during the demolition phase.

5.3.8 Spills Management

Oils and chemicals associated with the scheduled operations have been removed from site, thus reducing the risk of a spill. To mitigate the impact of any spills during the demolition processes the demolition contractor has an established management system which comprises standards, processes and procedures for spill prevention and actions to be taken in the event of a spill.

Measures are outlined as follows: -

Spill Prevention

- Regular inspection and timely repair of all tanks, bunds and pipe-work to maintain integrity;
- Location of liquid containers in designated areas only, on hard-standing away from drains and watercourses;
- Use of overfill protection, level alarms and emergency shut off valves as appropriate;
- Use of temporary bunds for oil or chemical storage required for work around site;
- Use of drip trays beneath any equipment that is likely to leak or result in spillage of pollutants;
- Training of personnel in spill management.

Provision of Spill-Kits/Spill Stations

- Spill Stations, containing spill kit materials, are placed at strategic locations about the Worksite.
- Each spill Station will include spill mats, absorbent granules and waste receptacles.
- Static plant must be sited with drip-tray protection.

Action in the event of a spill

- Penstock valve must be closed to prevent discharge off site
- Contain spillage to prevent entry into the drainage system
- Clean spillage if possible
- For a major spillage that is unable to be contained or cleaned contact emergency spill response service
- Dispose of spillage waste in accordance with waste procedures.

5.4 Emissions to Air

5.4.1 Dust

During the demolition of Barry power station there may be dust emissions, a suitable dust prevention procedure will be adopted by the demolition contractor to minimise these emissions.

5.4.2 F-Gases and Ozone Depleting Substances (ODS)

F-gasses and ODS that were present on site have been reclaimed by specialist licenced contractors and removed from site for recycling and disposal.

5.4.3 Asbestos

An independent asbestos survey/inspection has been conducted at Barry Power Station in order to locate as far as reasonably practicable the presence and extent of any suspect asbestos containing materials and assess their condition; the results of this survey/inspection are held on an asbestos register held on site.

Prior to demolition the register was reviewed by the demolition contractor and any suspected asbestos containing material will be removed and disposed of by a specialist licenced contractor.

5.4.4 Fire

The Site fire protection system has been decommissioned following the disconnection of natural gas from site and disconnection of site power, Fire protection will be provided by the demolition contractor during the demolition phase.

5.5 Waste management

Waste management during the demolition will be controlled by the principal contractor who has developed a Waste Management Plan and Materials Management Plan to provide details

of how the safe handling and movement of site-generated materials and imported materials as part of the demolition work.is carried out.

5.6 Noise management

In order to ensure environmental noise does not cause a nuisance to neighbours the following mitigation measures will be put into place:

- Noise will be minimised where necessary using silencers, baffles or any alternative methods deemed appropriate
- Plant engines will be switched off when not in use and engine covers closed
- Repetitive impact breaker use will be limited to 09:00 to 18:00 where necessary
- Noise level monitoring during demolition activities

5.7 Land Contamination

An independent Environmental Permit Site Condition Report (SCR) has been carried out in support of the permit (EPR/JP3333LV) surrender to demonstrate the land is in a satisfactory condition and environmental receptors have been protected throughout the operational phase of the permit. In accordance with NRW guidance an initial baseline survey was carried out at the permit application stage in 2006 and operational phase management and reviews maintained during the permit lifetime. The initial baseline survey and subsequent reviews conclude that the site posed a very low risk of contamination of soil and groundwater. The SCR concluded that no additional soil and groundwater sampling is considered necessary for the permit surrender application.

6 Appendix 1. Site Drawings

Figure 1. Site Layout Barry Power Station

Figure 2. Site Services layout drawing