

Calder Hall Environmental Management Plan

Issue 13 – June 2020

Introduction.

Calder Hall ceased generating electricity in March 2003, after 46 years of operation. In accordance with Government policy, work has now begun to systematically remove (or decommission) the plant and buildings associated with electricity generation at the site. Prior to commencing this work, Sellafield Ltd, the licensee of the site, were legally required to seek consent from the Health and Safety Executive (HSE) to carry out the decommissioning project.

Application was made to the HSE for consent to carry out the decommissioning project at Calder Hall in August 2004. In support of this application, an Environmental Statement was provided, which assessed the impacts of the project on the environment. Following extensive public consultation, the HSE granted consent to carry out the decommissioning project at Calder Hall in June 2005, subject to certain conditions.

Under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (EIADR), the HSE requires that the Licensee prepare an Environmental Management Plan (EMP) which shall:

- List the mitigation measures that are already identified in the Environmental Statement and evidence submitted [to the HSE] to verify information in the Environmental Statement.
- List the options to implement work activities where mitigation measures may be required but where selection of an option will only be possible in the future; and
- List the work activities where mitigation may be required but where assessment to identify mitigation measures will only be possible in the future.

It is a requirement of the conditions attached to the consent to describe the effectiveness of the mitigation measures over time and review annually or at a suitable frequency agreed with the Office for Nuclear Regulation (ONR). Up until June 2015 the EMP was reissued annually, however due to very little changing operationally at the facility in 2016 and 2017 it was agreed that it was not necessary to reissue an EMP for those years. The last review was issued in June 2019. This review considers any changes at Calder Hall since June 2019, and also considers the planned work for the Financial Year 2020/21.

Decommissioning Objectives at Calder Hall.

- i) Manage the existing hazard at the Calder Hall site.
- ii) Manage the progressive reduction in hazard potential on the Calder Hall site.
- iii) Continue defueling of the reactors in line with Magnox Operating Plan requirements.
- iv) Progress items on the critical path to Care and Maintenance.
- v) Minimise ongoing maintenance costs by “Backing Out” of plant and buildings by discontinuing usage and removing services
- vi) Remove other plant and buildings as resources permit.

Works Completed and in Progress up to Financial Year 2019/20.

Current Status.

The Calder Hall site currently comprises four reactors and associated facilities, including two turbine halls, sixteen heat exchangers, the control rod mortuary, and a series of other ancillary buildings. The majority of the facilities are redundant.

Turbine Hall A and a number of adjacent buildings are in an area of land that has been identified for redevelopment. As such demolition and ground remediation is required in this area by 2023 to support this significant site priority.

There is general deterioration of the aging facilities on the Calder Hall site, with some buildings such as the turbine halls being in a poor condition. Substantial asset care interventions will be required on buildings if they are not demolished promptly due to increased asset care and maintenance costs.

Asbestos Removal and Other Minor Decommissioning Activities.

Over the last few years work has been ongoing to improve the conventional safety in the area through commencement of minor decommissioning activities such as asbestos removal, removal of high voltage electricity cables, service strip out, waste removal and building cladding enhancement. During 2019/20, a significant amount of asbestos has been removed from the reactor buildings. Encapsulation works to primary circuits has taken place in the long and short blower houses associated with each reactor, and some roof repairs are ongoing at Reactor 3.

Defuelling.

All four reactors were declared fuel free by August 2019, which is consistent with the MAGNOX Operating Plan. Reactor 1 redundant Reactor Pile Cap Fuel route equipment (including Discharge and Charge Machines) have all been removed and disposed of. 50% of Reactor 3 redundant Reactor Pile Cap Fuel route equipment (including Discharge and Charge machines) have been removed and disposed of.

Demolition.

All Filter Pots have been removed from Reactors 1 and 2. The 20 Filter Pots contribute 30.4 tonnes of metal to the total of 200 tonnes of metal removed from Calder Hall over the last 12 months.

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Originally there were two chimney stacks associated with each reactor building. The removal of stacks from Reactors 1 and 4 is now 50% complete.



Reactor 1 filter pot removal. Crane proposal and PMP's signed. Crane arrived on site late 2019.



Reactor 1 filter pot removal. Commenced 2nd March 2020.

Impact on EIADR.

The progress described above is not considered to be a change or extension to the decommissioning project, therefore Regulation 13 of EIADR does not apply, and a Finding Of No Significant Effect (FONSE) form is not required.

Works Planned for Financial Year 2020/21.

Decommissioning of Turbine Halls.

Turbine Hall B is significantly degraded with water ingress in the building and a corroding structure. On balance of risk the Remediation priority area for decommissioning would be Turbine Hall B. However, it is recognised that the short-term land requirements for Turbine

Hall A underpin an As Low As Reasonably Practicable (ALARP) case to prioritise this area. Desk top studies will continue until March 2021, with physical work expected to start in 2022.

Land Clearance and Heat Exchanger Decommissioning.

In the short term the focus will be on commencing early decommissioning to support Calder Hall Land Clearance, i.e. asbestos removal, service diversion, and kit removal. Upon completion of Calder Hall Land Clearance, it is expected that a construction project will commence on that area of land.

During 2018/19 plans were drawn up for a pilot to remove one heat exchanger. That Pilot did not go ahead in 2019/20, and there are no plans to remove any heat exchangers in 2020/21. However, subject to funding, Reactor 1 heat exchanger bottom elbow will be separated and removed.

Decommissioning of Reactor Buildings.

Several items have been identified for removal from various parts of the four reactor buildings during 2020/21, including asbestos that was installed throughout.

The intention is to complete removal of the remaining 50% of Reactor 3 redundant pile cap fuel route equipment, including discharge and charge machines. There are also plans to complete removal of the remaining 50% of stacks from Reactor 1 and 4.

Repairs are required on the reactor building glazing, including spray coating being implemented on the high-level glazing.

Subject to funding and acceptance, the following additional work could potentially be completed during 2020/21.

Reactors 2 and 4 redundant reactor pile cap fuel route equipment (including discharge and charge machines) removal and disposal.

Removal of 20 filter pots in total from Reactors 3 and 4, and removal of stacks from Reactor 2 and 3 buildings.

Pilot project on one circuit in Reactor 1 blower house, 54" valve removal and permanent blanking off. This work will include removal of redundant lube oil equipment, section of shield wall and asbestos removal tasks in order to access the valve.

Impact on EIADR.

From the scope of work described above it is not expected that any of the work will have a significant adverse effect on the environment, and therefore does not require further assessment under EIADR.

Environmental Performance and Mitigation Measures.

It is a requirement of the conditions attached to the consent that this EMP reports on the effectiveness of the mitigation measures over time.

There are no significant changes to the mitigation measures that were submitted in the original Environmental Statement. However, there were continual improvements in traffic management due to changes in Sellafield Ltd's Transport Policy, up to the end of March 2020, when the Covid-19 epidemic forced a re-think.

Prior to the epidemic, employees and contractors were encouraged to share transport, (or use public transport) when travelling to or from the Sellafield Site. Shuttle bus routes and park and ride schemes were developed. In 2018/19 a proposal was made to install 80-100 charge points for electrical vehicles.

From the beginning of April 2020, these measures have been suspended, and are under constant review, based on Government advice in response to the Covid-19 epidemic.

Assessment of mitigation measures has concluded there is no potential for decommissioning work at Calder Hall planned for 2020/21 to cause any significant environmental effects, based on the following criteria (used in Calder Hall's Environmental Statement, submitted under EIADR 1999):

- Air quality and dust.
- Archaeology and cultural heritage.
- Ecology.
- Geology, hydrogeology and soils.
- Landscape and visual.
- Noise and vibration.
- Surface waters.
- Traffic and transport.

Conclusion.

There have been no significant changes to environmental performance since Issue 12 of the EMP was written in June 2019.

There have been no significant changes or extensions to the Decommissioning Project since the Environmental Statement was written in 2004, up to 2019/20.

Decommissioning work that is planned for Financial Year 2020/21 is not expected to have a significant adverse effect on the environment, and therefore does not require further assessment under EIADR.