

Summary Information Report

To support the Demolition of Calder Control Rod Mechanism Workshop

Building Description

The Control Rod Mechanism Workshop (CRMW) was built in 1956 and was originally intended to be used as a carbon dioxide store. This appeared to be the buildings' sole purpose until around 1991 when the original gas storage tanks were removed, and newer replacement bulk CO₂ storage tanks were located at the south end of the building. In addition to this, a small area at the northwest corner of the building was partitioned off for the construction of a control room for supplying gas to the turbine hall.



The CRMW building in 1984 with the original bulk CO₂ storage tanks at the south end. To the east is Turbine Hall A and to the west across the road is the Engineering Workshop.

The remaining area inside the CRMW was redeveloped for maintenance of reactor equipment and this included a Decontamination Area and set of changing rooms. Also the 'Bulk CO₂ Valve House' plant used for regulating the feed of CO₂ to the Turbine Hall was constructed attached to the East side of the CRMW and the demolition of this will be carried out as part of the overall demolition of the CRMW.



The CRMW in 2018 showing the west elevation and the lifting beam on that side.

The CRMW is located to the East of the Calder Engineering Workshop and to the West of Turbine Hall A. The building is approximately 38m long, 9m wide and 5m high, externally the building has metal cladding to the longitudinal elevations. The gable elevations are constructed from brickwork supported at the sides and to a central wind post. There are a number of lifting beams internally, these service the loading bay on West elevation (see photo above).

Up until it's redundancy, the building was used as a processing area for the decontamination of items from the Reactors to support maintenance. There is an area within the building which includes redundant steam/water baths and these will be removed as part of cleaning and roll back activities prior to any demolition activities. The bulk CO₂ tanks and associated pipework have already been removed.

Reason for Demolition

- The building is now redundant and no longer has a function on site.
- The Calder Land Clearance Project is part of the overall site remediation portfolio and once removed this will release a significant land area for reuse.
- Demolition of this structure will reduce the life cycle costs of maintaining it safely and securely.
- The demolition of the building is to be completed at the earliest opportunity.

Method of Demolition

The demolition tasks will be executed by Integrated Decommissioning Solutions (IDS), who have been appointed by Sellafield Ltd. IDS have proven experience across the Sellafield site using industry standard techniques.

An overview of the demolition of the CRMW is as follows: -

- Carry out de-planting and characterisation of waste materials prior to demolition of building.

- Demolition of the brick structure at the South end of the main building and removal of subterranean tank.
- Back fill basement following removal of tank.
- Removal of plant associated with the ventilation system and ductwork in trenches.
- Install temporary measures to ensure structural stability of the structure through the entire demolition process.
- Demolish the building using an excavator (with attachments) working from South to North, this removes the bracing members early in the sequence. However, the main benefits from this method is better access is gained and removal of waste material is simplified.

Outline De-Planting Sequence

Prior to the commencement of de-planting the building will be in the following state:

- All services will have been isolated.
- A full asbestos survey will have been undertaken followed by an asbestos strip.
- Radiological and chemical contamination of the building will have been removed to acceptable levels for the chosen waste route.
- A soft strip of the building will have occurred.

Environmental Impact and Waste Streaming

- Appropriate characterisation of waste has taken in line with SL procedures.
- Asbestos R&D Surveys have been undertaken to determine appropriate routes.
- An Out of Scope (OOS) Metals agreement is in place between SL and IDS.

The following waste has been determined for the demolition for the CRMW:

Waste Type	Waste Weight (te)	Radiological Categorisation	Chemical Categorisation	Waste Route
Bitumen (Felt)	2.7	VLLW	Hazardous	LA-LLW - Disposal
Brick	7.46	OOS	Non - Hazardous	OOS - Recycle
Brick	27.17	VLLW	Non – Hazardous	VLLW - Disposal
Cabling	1.81	VLLW	Non - Hazardous	LA-LLW - Disposal
Ceramic	0.02	VLLW	Non - Hazardous	VLLW - Disposal
Concrete	17.53	OOS	Non - Hazardous	OOS - Recycle
Concrete	~0.0	VLLW	Non - Hazardous	VLLW - Disposal
Fibreglass	0.03	VLLW	Non - Hazardous	VLLW - Disposal
Fibreglass Insulation	0.32	VLLW	Non - Hazardous	VLLW - Disposal
Glass	0.6	OOS	Non- Hazardous	VLLW - Disposal
Glass	0.67	VLLW	Non- Hazardous	VLLW - Disposal
GRP	1.23	VLLW	Non- Hazardous	VLLW - Disposal
Metal (Ferrous)	0.44	OOS	Non- Hazardous	OOS - Disposal
Metal (Ferrous)	37.21	VLLW	Non- Hazardous	VLLW - Disposal
Metal (Non-ferrous)	0.27	OOS	Non- Hazardous	OOS - Disposal

Metal (Non-ferrous)	5.49	VLLW	Non- Hazardous	VLLW - Disposal
Plaster	0.77	VLLW Subject to Decon to OOS	Non- Hazardous	
Plastics	0.02	OOS	Non- Hazardous	OOS - Disposal
Plastics	0.13	VLLW	Non- Hazardous	VLLW - Incineration
Timber	0.04	OOS	Non- Hazardous	OOS - Disposal
Timber	3.74	VLLW	Non- Hazardous	VLLW - Disposal

Ecology Report

Please find the attached report, which was completed in 2021 for the full scope of the Calder Land Clearance Project (CLC).