|  |
| --- |
|  |
| ONR Project Assessment Report  Agreement to Commence the Demolition of Pile 1 East Blower House [redacted] |



ONR Project Assessment Report

**Project Name**: Pile 1 East Blower House [redacted] Demolition

**Report Title**: Agreement to Commence the Demolition of Pile 1 East Blower House [redacted]

**Dutyholder**: Sellafield Limited

**Report Issue No**.: 1

**Publication Date**: April 2024

**Document ID**: ONRW-2019369590-8836

© Office for Nuclear Regulation, [2024]

For published documents, the electronic copy on the ONR website remains the most current publicly available version and copying or printing renders this document uncontrolled. If you wish to reuse this information visit [www.onr.org.uk/copyright](http://www.onr.org.uk/copyright) for details.

# Executive Summary

**Permission requested**

The licensee, Sellafield Limited, has requested our agreement to commence the demolition of the Pile 1 East Blower House, otherwise known as [redacted]. Sellafield Limited’s request is in accordance with its arrangements made under Licence Condition 22: *Modification or experiment on existing plant*.

**Background**

[redacted] was originally the East Blower House for Windscale Pile 1, providing cooling air to the pile during operations. Following retirement of Pile 1 operations, [redacted] was converted into a series of laboratories and offices. These are in an aged condition, are no longer required and as such the building is in a state of care and maintenance. A driver for demolition is that it will create space in a congested area of the site for facilities to support ongoing high-hazard risk reduction activities.

Standard demolition techniques will be employed including the use of mobile demolition machines operated by specialist contractors. A High Reach Demolition Rig will be utilised for removing roof elements from [redacted] and a demolition machine fitted with a boom/arm assembly will be utilised for demolishing the main [redacted] steelwork structure. The choice of these machines has been influenced by the potential for impact on neighbouring Pile Fuel Storage Pond structures as a mobile crane would have a greater topple radius. Some manual demolition will also be carried out from the scaffold support using hand tools.

The demolition of the building does not in itself present any radiological hazards under normal conditions. Specific fault conditions could arise during demolition activities taking place on the south side of [redacted], whereby a mobile demolition machine could potentially collide with the Pile Fuel Storage Pond and associated structures through toppling or maloperation. In particular, as a result of impact by a demolition machine, damage to the skip handler machine could affect its stability. Potential collapse of the skip handler machine into the pond could ultimately result in loss of bulk containment due to a failure of the pond structure.

Sellafield Limited’s safety case documentation identifies a number of key safety measures to minimize the potential for such faults. These primarily focus on ensuring that the building floor slab is suitable to support the demolition machines, thus eliminating the potential for toppling and defining specific safe operating zones for the demolition machines and associated controls. Additionally, a key operational control will be to park the skip handler machine at the east end of the pond during demolition tasks where the potential for impact with the skip handler machine support structure is minimised.

There are also conventional health and safety hazards associated with the proposed activity including working from height and the potential for toppling of a demolition machine, dropped loads and structural collapse.

**Assessment and inspection work carried out by ONR in consideration of this request**

Following initial consideration of Sellafield Limited’s proposal, it was judged proportionate to obtain specialist safety inspector advice based on the safety significance of the proposed activity. Therefore, advice was sought from our specialist inspectors covering fault studies, human factors, mechanical engineering, conventional health & safety and civil engineering.

This permissioning decision has also been informed by our readiness inspection to assess the adequacy of Sellafield Limited’s implementation of its Licence Condition 22 arrangements and safety case for the proposed modification.

**Matters arising from ONR’s work**

Our specialist inspectors did not raise any recommendations to prevent us agreeing to Sellafield Limited’s request. Our readiness inspection rated Sellafield Limited’s safety case implementation activities under its Licence Condition 22 arrangements for the proposed modification as ‘GREEN’ (no formal action). In addition, Sellafield Limited has satisfactorily demonstrated that its proposal has been subject to independent internal governance and oversight by its Nuclear Independent Oversight function. This independent internal governance provides additional regulatory confidence.

**Conclusions**

Based on the safety case evidence sampled, our specialist inspectors’ assessments, and our readiness inspection, we are of the opinion that, for the proposed modification, Sellafield Limited has provided adequate evidence to demonstrate that:

* Risks to workers and the public arising from [redacted] demolition will be reduced by Sellafield Limited so far as is reasonably practicable.
* Suitable and sufficient safety measures, both human actions and structures, systems and components, have been designed and implemented to provide adequate control of hazards.
* It has adequately undertaken its safety case implementation activities under its Licence Condition 22 arrangements such that there are no shortfalls that would prevent us agreeing to Sellafield Limited’s request.
* It has been subject to an adequate level of independent and internal challenge and governance in accordance with Sellafield Limited’s arrangements.

**Recommendation**

It is recommend that we issue Licence Instrument 548 (SEL77844N Licence Instrument Number 548 – [redacted] Demolition – PMP 5: [redacted] Main Demolition) agreeing to Sellafield Limited’s request to commence the demolition of Pile 1 East Blower House.

Table 2: List of abbreviations

|  |  |
| --- | --- |
| Term/Acronym | Description |
| ALARP | As low as reasonably practicable |
| APPP | Assessment of People Plant and Processes |
| COSHH | Control of Substances Hazardous to Health |
| DBA | Design Basis Analysis |
| HRDR | High Reach Demolition Rig |
| INSA | Independent Nuclear Safety Assessment |
| LC | License Condition |
| LFE | Learning From Experience |
| NIO | Nuclear Independent Oversight |
| ONR | Office for Nuclear Regulation |
| PAR | Project Assessment Report |
| PFSP | Pile Fuel Storage Pond |
| PMP | Plant Modification Proposal |
| RGP | Relevant Good Practice |
| RPE | Respiratory Protective Equipment |
| SAP | Safety Assessment Principle(s) |
| SHM | Skip Handler Machine |
| SSC | Structure, System and Component |
| SCIE | ONR Sellafield Compliance, Intelligence and Enforcement |
| TAG | Technical Assessment Guide (ONR) |

Table of Contents

[Executive Summary 4](#_Toc170122413)

[1. Permission Requested 8](#_Toc170122414)

[2. Background 8](#_Toc170122415)

[3. Assessment and Inspection Work Carried out by ONR in Consideration of this Request 10](#_Toc170122416)

[4. Matters Arising from ONR’s Work 11](#_Toc170122417)

[4.1. ONR Assessments 11](#_Toc170122418)

[4.2. Human Factors Assessment 11](#_Toc170122419)

[4.3. Fault Studies Assessment 12](#_Toc170122420)

[4.4. Mechanical Engineering Assessment 13](#_Toc170122421)

[4.5. Conventional Health & Safety Assessment 14](#_Toc170122422)

[4.6. Civil Engineering Assessment 15](#_Toc170122423)

[4.7. Readiness Inspection 15](#_Toc170122424)

[5. Conclusions 16](#_Toc170122425)

[6. Recommendations 16](#_Toc170122426)

[References 17](#_Toc170122427)

# 

# Permission Requested

1. The licensee, Sellafield Limited, has requested our agreement to commence the demolition of the Pile 1 East blower House, otherwise known as [redacted] [1]. Sellafield Limited’s request is in accordance with its arrangements made under Licence Condition (LC) 22: *Modification or experiment on existing plant.* This permission is associated with hold point number 483 on the Sellafield Limited Hold Point Control Plan.
2. In support of Sellafield Limited’s request, it has submitted an associated Plant Modification Proposal (PMP) [2], which has been subject to consideration and approval at Sellafield Limited’s Beta Gamma Management Safety Committee [3]. The PMP has also been subject to review by the Sellafield Limited Nuclear Safety Committee [4]. Sellafield Limited has categorised this PMP as radiological safety category “A” which we consider appropriate.
3. Sellafield Limited’s safety case documentation has been subject to review by Independent Nuclear Safety Assessment (INSA) [5] and all safety arguments were found to be acceptable. The proposal has also had independent oversight by the Sellafield Limited Nuclear Independent Oversight (NIO) function. NIO produced an Observation Record [6] where the safety arguments were reviewed and found to be acceptable. NIO have further undertaken a Readiness Review through an Assessment of People Plant and Processes (APPP) to confirm that the controls identified in the safety case have been adequately implemented.
4. This Project Assessment Report (PAR) records our judgement on Sellafield Limited’s request. It has been produced in accordance with our guidance [7]. The permissioning strategy for this regulatory hold point has been previously agreed with the our Sellafield Compliance, Intelligence and Enforcement (SCIE) Delivery Lead [8].

# Background

1. Built in 1949, [redacted] was originally the East Blower House for Windscale Pile 1, providing cooling air to the pile during operations. Following cessation of Pile 1 operations, [redacted] was converted into a series of laboratories and offices. These are in an aged condition, are no longer required and as such the building is in a state of care and maintenance. It lies outside the north boundary of the Sellafield Site Separation area, with the [redacted] south wall forming part of Separation area boundary. A driver for demolition is that it will create space in a congested area of the Sellafield site for facilities to support ongoing high-hazard risk reduction activities.
2. Standard demolition techniques will be employed including the use of mobile demolition machines operated by specialist contractors. A High Reach Demolition Rig (HRDR) will be utilised for removing roof elements from [redacted] and a Sennebogen 825 demolition machine fitted with a boom/arm assembly will be utilised for demolishing the main [redacted] steelwork structure. The choice of these machines has been influenced by the potential for impact on neighbouring Pile Fuel Storage Pond (PFSP) structures as a mobile crane would have a much greater topple radius. Some manual demolition will also be carried out from the scaffold support using hand tools.
3. The demolition of the building does not in itself present any radiological hazards under normal conditions. Specific fault conditions could arise during demolition activities taking place on the south side of [redacted], whereby a mobile demolition machine could collide with PFSP and associated structures through toppling or maloperation. In particular, as a result of impact by a demolition machine, damage to the skip handler machine (SHM) could affect the stability of the SHM. Potential collapse of the SHM into the pond could ultimately result in loss of bulk containment due to a failure of the pond structure.
4. Sellafield Limited’s safety case documentation identifies a number of key safety measures to minimize the potential for such faults. These primarily focus on ensuring that the building floor slab is suitable to support the demolition machines and defining specific safe operating zones for the demolition machines and associated controls. Additionally, a key operational control will be to park the SHM at the east end of the pond during demolition tasks where the potential for impact with the SHM support structure is minimised.
5. There are also conventional health and safety hazards associated with the proposed activity including working from height and the potential for toppling of a demolition machine, dropped loads and structural collapse.
6. Sellafield Limited’s strategy for managing the totality of the work is to split the work into eight PMPs. PMP 8 – Void Filling Works relates to the void filling works beneath [redacted] to ensure that the floor slab is suitable to support the demolition machines. The floor slab has been substantiated as able to support loads imposed by the demolition machines and the Project Engineering Manager has confirmed correct installation. PMP 5 – [redacted] Main Demolition [2] is the subject of this permission.
7. [redacted] has a redundant water duct which runs across the building, splitting it into a north and south side. North of the water duct, an electrical substation structure prevents demolition machines from posing a risk to any PFSP structure. Notwithstanding this, Sellafield Limited will implement the full safety case prior to north side demolition activities to enable operators to become familiar with the arrangements. Following completion of the north end demolition work, Sellafield Limited will hold a Learning From Experience (LFE) session. The recommendations from this session must be closed out prior to commencement of south end demolition work.

# Assessment and Inspection Work Carried out by ONR in Consideration of this Request

1. Given the safety significance of this proposed activity and the potential consequences associated with an impact to PFSP, we judged it proportionate to obtain advice from our specialist safety inspector. We sought advice from the following specialist areas, which was agreed with the our SCIE Delivery Lead as part of agreeing the regulatory permissioning strategy [8]:

* Fault Studies
* Human Factors
* Mechanical Engineering
* Conventional Health and Safety
* Civil Engineering

1. Following my initial consideration of Sellafield Limited’s proposed activity, we targeted the above discipline areas based on the hazards identified by Sellafield Limited. We are content that Sellafield Limited has adequately identified the hazards associated with the proposed activity. The key faults identified relate to collapsing or maloperation of a mobile demolition machine resulting in impact with the PSFP structure. These faults are mitigated by operational controls and use of suitable structures, systems and components (SSCs) which are relevant to the above disciplines.
2. To initiate the regulatory engagement on Sellafield Limited’s proposed modification, an initial pre-submission meeting was held between Sellafield Limited and ourselves which focussed on clarifying our understanding of the proposed activity and supporting safety case. This also provided an opportunity for specialist inspectors to provide Sellafield Limited with initial feedback [9]. Our assessors also visited Sellafield Limited and [redacted] during their assessment which provided further clarity and context on the proposed activity [10].
3. Our specialist inspectors have assessed Sellafield Limited’s safety case summary report [11] and the relevant supporting documentation. Our inspectors raised technical queries with Sellafield Limited as appropriate and where necessary held Level 4 meetings to inform their assessment.
4. In support of our assessments, Sellafield Limited’s responses to technical queries raised by our specialist inspectors are listed within the technical query register [12].
5. This permissioning decision has also been informed by our readiness inspection [13] to assess the adequacy of Sellafield Limited’s implementation of its LC 22 arrangements for the proposed modification.
6. In accordance with the ONR/Environment Agency Memorandum of understanding, we have consulted with the Environment Agency on whether it has any objections on environmental grounds to us agreeing to Sellafield Limited’s request. The Environment Agency confirmed that it has no objections to us issuing the licence instrument [14].

# Matters Arising from ONR’s Work

## ONR Assessments

1. The process employed by us in carrying out our permissioning activities is defined in our guidance [7]. The specialist inspectors have undertaken a sampling approach in their assessment of Sellafield Limited’s safety case and have applied national and international Relevant Good Practice (RGP) as appropriate. Our Safety Assessment Principles (SAPs) [15] and our relevant Technical Assessment Guides (TAGs) [16] have been used in forming our judgements on the adequacy of the safety case. Assessments have been carried out in line with our guidance on the production of reports for permissioning and assessment [17] and mechanics of assessment [18].

## Human Factors Assessment

1. The safety case includes significant claims from a human factors perspective. Our human factors inspector’s assessment [19] focussed on the important human actions and administrative controls claimed in the safety case. In particular, the assessment focussed on:

* Human factors integration.
* Identification and substantiation of safety important human actions and administrative controls.
* Task design.
* Procedures, competence and supervision.
* Whether the residual risk has been reduced as low as reasonably practicable (ALARP).

1. The Human Factors inspector found a good level of human factors integration, though found the human factors safety case documentation difficult to follow and assess. To secure improvement in relation to this shortfall, the human factors inspector raised an additional action within Regulatory Issue 10600 for Sellafield Limited to review our feedback on the human factors aspects of the safety case for this activity to secure improvements in the clarity and adequacy of future submissions. This will be tracked through to completion as part of normal regulatory business.
2. Our human factors inspector is of the opinion that Sellafield Limited has put in place measures to ensure that the demolition machines do not topple and that if they were to topple they would not come into contact with the SHM. The inspector noted that these measures require adherence to processes and as such could be subject to human error. However, the inspector noted that there is independence between the controls and opportunities for recovery. Hence, the inspector concluded that they had not identified any further measures that could be considered reasonably practicable and considered that the residual risk is low and ALARP.
3. At the time of the assessment, work to complete some operational aspects to implement the safety case was still progressing. Our human factors inspector therefore raised a recommendation that these aspects will be reviewed during the readiness inspection. Subject to satisfactory closure of this recommendation (see Section 4.7 below), our human factors inspector recommended that permission be granted for the proposed activity from a human factors perspective.

## Fault Studies Assessment

1. The safety case highlights several faults which could give rise to a radiological consequence, principally through impact of a demolition machine with PFSP or associated structures. Our fault studies inspector’s assessment [20] focussed on:

* Fault/hazard identification and sequence development.
* Fault tolerance/effectiveness of safety measures and defence in depth.
* Adequacy of safety case and ALARP demonstration.

1. Our fault studies inspector was satisfied that Sellafield Limited had adequately identified potential hazards and faults associated with the proposed activity. The inspector judged that Sellafield Limited had applied reasonable judgement to the screening of hazards and faults to be subject to safety assessment. The inspector also judged that Sellafield Limited had adequately developed the fault sequences associated with the demolition machines and that the analysis of consequences was in line with expectations.
2. The inspector noted that Sellafield Limited had applied a qualitative barrier analysis approach rather than a Design Basis Analysis (DBA) approach which would normally be expected for providing confidence that safety measures are adequate to protect against risk. Nevertheless, the inspector judged this approach acceptable given the short transient nature of the proposed activity and that the use of this methodology had no impact on the safety measure outcomes.
3. The inspector focussed on the key operational control to park the SHM at the east end of the pond during demolition tasks where the potential for impact with the SHM support structure is minimised. The inspector was satisfied that this safety measure is effective and fault tolerant and was satisfied that to design and install engineered safety measures would not be reasonably practicable. Sellafield Limited’s safety case documentation demonstrated a clear route to implementation of the identified safety measures.
4. Our fault studies inspector in undertaking their assessment liaised with other specialist areas. The inspector liaised with the human factors inspector with respect to the administrative arrangements and operational protection measures in place to prevent demolition activities from threatening neighbouring facilities. The inspector liaised with our civil engineering inspector with respect to the demolition methodology adopted and its appropriateness for balancing risk. They also liaised with our mechanical engineering inspector with respect to validity on safety case claims on dropped loads and topple impact withstand.
5. Overall, our fault studies inspector concluded that Sellafield Limited’s safety submission presented evidence to demonstrate that risks are low and controlled ALARP. The inspector concluded that there is no impediment from a fault studies perspective to us granting permission to the proposed activities.

## Mechanical Engineering Assessment

1. Our mechanical engineering inspector’s assessment [21] focussed on:

* The potential for damage to structures containing radiological inventory by demolition machines.
* The consequences of the demolition on nearby facilities.

1. Our mechanical engineering inspector considered whether the use of an engineering protective system could be implemented to ensure that the demolition machines operate within defined limits. The inspector considered, given the short timeframe of the proposed activity, that there were not any proportionate mechanical protective measures which could be implemented.
2. The inspector was also content that Sellafield Limited had adequately considered the consequences of the demolition on nearby activities and considered that there is no increase in risk to those facilities as a direct result of dust generation or seismic load.
3. Overall, the inspector concluded that Sellafield Limited had provided sufficient evidence to demonstrate that risks will be controlled ALARP and recommended that we grant permission to the proposed activity from a mechanical engineering perspective.

## Conventional Health & Safety Assessment

1. There are a number of conventional health & safety hazards associated with the proposed activity. The conventional health & safety inspector’s assessment [22] focussed on:

* Asbestos management
* Control of respirable crystalline silica
* Management of hand arm vibration risks
* Control of lead

1. Our conventional health & safety inspector, through consideration of asbestos survey information and discussions with Sellafield Limited and contractors, was content that the risks to workers from disturbing asbestos have been controlled. The majority of asbestos containing materials have already been removed from [redacted] and the inspector was content that should any further asbestos containing material be found, that the contractors have the competence to identify and deal with it appropriately.
2. Respiratory Protective Equipment (RPE) will be utilised to protect against exposure to silica dust. Our conventional health & safety inspector raised a technical query on the use of water suppression to further reduce the risk of exposure. The demolition contractors agreed to re-consider their approach and amended the method statement to utilise water suppression. The inspector considered the revised method statement to be in accordance with The Control of Substances Hazardous to Health (COSHH) hierarchy and followed relevant good practice for controlling exposure to dust during construction activities.
3. During the site visit, the demolition contractors stated that the paint within the building had been tested and no lead content was detected. Our conventional health & safety inspector was content that the risk of exposure to lead was low and that the demolition contractors have adequate procedures for monitoring and controlling exposure to lead.
4. Hand tools will be utilised during the demolition to break out block/brick infill walls. A Hand Arm Vibration Syndrome (HAVS) calculator will be used to assess trigger times and during the site visit our conventional health & safety inspector was able to confirm that demolition contractor workers are under health surveillance for HAVS. The inspector was content that these control measures are adequate to ensure operatives do not exceed trigger times.
5. Overall, our conventional health & safety inspector concluded that Sellafield Limited has suitable arrangements to manage the health risks assessed. The inspector had no objection from a conventional health & safety perspective for us to grant permission to the proposed activities.

## Civil Engineering Assessment

1. The proposed activity includes civil engineering considerations relating to the building structure and demolition methodology. Our civil engineering specialist inspector’s assessment [23] focussed on a review of documentation during our readiness inspection [13]. The inspector reviewed the alignment of documentation with building conditions and the demolition contractor’s method statement.
2. Some minor observations were made including wind loading considerations which were resolved during the readiness inspection. The inspector found that the method statement content, sequencing and methodology met our expectations and showed good alignment between contractor and supervisor.
3. The civil engineering inspector considered Sellafield Limited’s arrangements for the proposed activity to be consistent with our expectations and recommended that we grant permission to the proposed activity from a civil engineering perspective.

## Readiness Inspection

1. To inform the permissioning decision, we undertook a readiness inspection to assess the adequacy of Sellafield Limited’s safety case implementation activities in accordance with its LC 22 arrangements for the proposed activity [13]. The inspection team comprised our project inspector and human factors, mechanical engineering and civil engineering specialist inspectors.
2. The inspection took the form of a visit to the facility in question, followed by technical discussions and a review of documentation. The inspection team considered that the Sellafield Limited Nuclear Independent Oversight (NIO) function had undertaken a comprehensive APPP process and that, from discussions, Sellafield Limited provided assurance that all significant findings were on track to be closed out prior to the target date for commencing the proposed activity. Following the readiness inspection, Sellafield Limited provided evidence that all remaining APPP findings had been closed out. A number of other positive findings were also made.
3. Some minor observations and requests for documentation were also made during our inspection. These observations primarily related to human factors matters and or human factors specialist inspector was content that once these observations were satisfactorily closed out, the outstanding human factors recommendation could be closed. Following the readiness inspection these observations and requests for further documentation were closed out and our human factors inspector closed this recommendation.
4. Overall, no findings were made that would prevent us agreeing to the proposed activity. Following the readiness inspection, Sellafield Limited provided evidence that all remaining APPP findings had been closed out and other observations made during our readiness inspection have also subsequently been closed.

# Conclusions

1. Based on the safety case evidence sampled, our specialist inspectors’ assessments, and our readiness inspection, we are of the opinion that, for the proposed modification, Sellafield Limited has provided adequate evidence to demonstrate that:

* Risks to workers and the public arising from [redacted] demolition will be reduced by Sellafield Limited so far as is reasonably practicable.
* Suitable and sufficient safety measures, both human actions and structures, systems and components, have been designed and implemented to provide adequate control of hazards.
* It has adequately undertaken its safety case implementation activities under its Licence Condition 22 arrangements such that there are no shortfalls that would prevent ONR agreeing to Sellafield Limited’s request.
* It has been subject to an adequate level of independent and internal challenge and governance in accordance with Sellafield Limited’s arrangements.

# Recommendations

1. We recommend the issuing of Licence Instrument 548 (SEL77844N Licence Instrument Number 548 – [redacted] Demolition – PMP 5: [redacted] Main Demolition) agreeing to Sellafield Limited’s request to commence the demolition of Pile 1 East Blower House.

# References

|  |  |
| --- | --- |
| [1] | *Sellafield Limited. Request for Agreement Under Arrangements Made Under License Condition 22: [redacted] Demolition Project, Impletmentation of Category A [redacted] Main Demolition. CM9: 2023/19984. SL-2022-466/02. 31 March 2023.* |
| [2] | *Sellafield Limited. PMP Title: [redacted] Demolition - PMP 5: [redacted] Main Demolition. PMP Number: BETAGAMMA/[redacted]/0005. Issue 4. SLF 1.02.14.01. May 2022. CM9: 2023/53965.* |
| [3] | *Sellafield Limited Management Safety Committee (MSC) Beta Gamma MSC M246 Minutes of Meeting. 01 March 2023. CM9: 2023/19984.* |
| [4] | *Nuclear Safety Committee Minutes Extract. 2023.04: Pile 1 East Blower House ([redacted) Main Demolition. CM9: 2023/19984.* |
| [5] | *Record of Independant Nuclear Safety Assessment of Safety Case Documentation - [redacted] Demolition Project - PMP 5 [redacted] Main Demolition. INSA 3113. Sellafield Limited. December 2020. CM9: 2023/59119.* |
| [6] | *Observation Record - [redacted] Blower House Demolition. SL-OBSREC-00070. Sellafield Limited. 10 October 2023. CM9: 2023/59141.* |
| [7] | *ONR Guidance Document. Document Reference Number NS-PER-GD-001. Nuclear Safety Permissioning. October 2023. CM9: 2021/32823.* |
| [8] | *WIReD Permissioning Plan - Demolition of Pile 1 East Blower House. PR-01101..* |
| [9] | *ONR Contact Record. ONR-SDFW-CR-23-428 - Level 4 Engagement to Recommence Pile 1 East Blower House Demolition Assessment and Safety Case Update. 06 October 2023. CM9: 2023/52655.* |
| [10] | *ONR Contact Record. ONR-SDFW-CR-23-507 - Level 4 Site Visit for the Permissioning of the Demolition of the Pile 1 East Blower House. 01 November 2023. CM9: 2023/59032.* |
| [11] | *Pile 1 East Blower House Demolition Safety Case Summary. Sellafield Limited. Revision 9. Remediation MSC P(22)64 RP/GEN-DECOM/SAFE/00042. October 2023. CM9: 2023/53952.* |
| [12] | *Pile 1 East Blower House [redacted] Demolition Project Technical Query Tracker. CM9: 2024/0014316.* |
| [13] | *[redacted] Main Demolition Readiness Inspection. IR-53275..* |
| [14] | *Pile 1 East Blower House Notice of No Objection. Environment Agency. 16 November 2023. CM9: 2023/59826.* |
| [15] | *Safety Assessment Principles for Nuclear Facilities. ONR. 2014 Edition, Revision 1. January 2020. https://www.onr.org.uk/saps/saps2014.pdf.* |
| [16] | *Permissioning Inspection - Technical Assessment Guides. ONR. http://www.onr.org.uk/operational/tech\_asst\_guides/index.htm.* |
| [17] | *ONR Guidance Document - Guidance on Production of Reports for Permissioning and Assessment. ONR. December 2023. Doc. Ref. No.: NS-TAST-GD-108. Issue No.: 2.* |
| [18] | *ONR Technical Assessment Guide (TAG) - Guidance on Mechanics of Assessment. Issue No.: 1.2. December 2022. Doc. Ref.: NS-TAST-GD-096. CM9: 2019/335774.* |
| [19] | *ONR Assessment Report. Demolition of Pile 1 East Blower House - Human Factors Assessment. Revision 0. WIReD record: AR-01160.* |
| [20] | *ONR Assessment Report. Fault Studies Assessment of Pile 1 East Blower House Demolition at Sellafield Limited. Report Ref: ONRW-AR-01090. August 2023. Issue 1. WIRed Record AR-01090.* |
| [21] | *Mechanical Engineering assessment of [redacted] blower house demolition. AR-01175.* |
| [22] | *Conventional Health and Safety Assessment of [redacted] Blower House Demolition. AR-01180.* |
| [23] | *Assessment Report Civil Engineering. AR-01490.* |