



Site Redevelopment Programme (SRP) - D58

**Agreement to commence SRP Activities held by BAESML Phase Hold Point PBC-D58-3
– D58 Main Works**

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EXECUTIVE SUMMARY

Agreement to commence SRP Activities held by BAESML Phase Hold Point PBC-D58-3 – D58 Main Works

Permission Requested

1. The Licensee requested ONR's Agreement, under their arrangements for Licence Condition 19(1), to commence Site Redevelopment Programme activities, held by BAE Systems Marine Limited Phase Hold Point PBC-D58-3 – D58 main works.

Background

2. D58 is a new nuclear facility on the licensed site, to support Dreadnought build and commissioning. ONR has chosen to permission key stages during the build process, to ensure that the facility will meet the safety requirements and standards applicable, and that when operational, the risks posed from operations will be controlled as low as reasonably practicable (ALARP)
3. The construction of D58 is a key part of the licensee's Site Redevelopment Programme, in support of the Dreadnought Class Submarine programme. To enable delivery of this key infrastructure project, ONR agreed that BAESML could split the safety case supporting the construction, known as a Pre-Commencement Safety Report (PCSR), into two phases. Phase one scoped to underpin the design and function of the main building construction (PCSR1), with Phase two delivering the pre-commencement safety report (PCSR2) to include the remaining equipment to support safe operation.
4. BAESML has produced an interim Pre-Commencement Safety Report (PCSR1) to justify and substantiate the engineering for the main building construction, in order to demonstrate that the building meets the safety functional requirements identified for all possible fault conditions posed by the proposed operations.
5. BAESML's PCSR2 update will include the main crane and other equipment in a separate submission to ONR, subject to a separate ONR permission.
6. In line with ONR's principles of enabling regulation, we mapped our regulatory permissions to the licensee's overarching strategy and developed our regulatory strategy around the licensee's programme.
7. Based on this two-phased safety case approach, ONR targeted its assessment to gain sufficient understanding of the wider case for operations and obtain regulatory confidence that the main structure will deliver the safety functional requirements identified in the safety case, when the design and safety case is completed. If BAESML has inadequately designed or substantiated the construction of the main civil structure, it may foreclose opportunities to reduce risks to be ALARP. Hence, it is necessary for ONR to gain confidence that BAESML has identified all faults that could lead to a potential nuclear safety consequence. To do this, ONR required BAESML to provide adequate justification and evidence to allow ONR to judge that the construction of this design can proceed.
8. The introduction of nuclear material will be subject to future regulatory oversight, with hold-points identified in line with the permissioning strategy.
9. In line with ONR's permissioning purposes, ONR defined a regulatory hold point on the project (PBC-D58-3). This is subject to derived power 'Agreement' in accordance with

the licensee's Licence Condition 19 arrangements. When ONR agrees, a derived power Licence Instrument (LI) will be issued to agree to the commencement of construction of the ground bearing slab (nuclear – first structural concrete).

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

10. ONR carried out a targeted assessment of the submission and supporting documentation, raised regulatory queries and provided advice and guidance through regular engagements during the development of the safety cases. ONR produced six targeted assessment reports by specialist inspectors, in line with the planned regulatory permissioning strategy.

Matters arising from ONR's work

11. Due to the strategic importance and programme pressures associated with this project, ONR adopted an enabling regulatory approach to this assessment. In agreement with ONR, BAESML initially provided documentation for early engagement that had not completed all internal governance processes. Subsequently, ONR received the approved documentation. Although this resulted in significant additional regulatory effort, ONR completed its assessment sooner, in support of BAESML's schedule.
12. ONR's assessment resulted in a number of regulatory queries that needed BAESML to produce additional evidence to support their claims. Many of the findings and recommendations in the assessment reports resulted from the maturity of the design and interim safety case. The findings principally identify areas where ONR considers the licensee needs to provide additional evidence or assessment in the PCSR2 safety case. Regulatory Issues record and track the recommendations to closure during the project, at the appropriate point in the schedule. There are no nuclear safety hazards within D58 until first nuclear use.
13. BAESML has developed a forward action plan (FAP), including some items that relate to design and substantiation activities of the main building structure. The forward action plan requires the completion of these items during BAESML's main build schedule. I have assured myself that BAESML is controlling the forward action plan in line with their arrangements, considered the outstanding work items and have developed a proportionate and targeted strategy of regulatory oversight and control of these items.
14. From evidence provided in the specialist inspector's assessment reports, I consider the licensee has delivered sufficient evidence to substantiate the safety claims made on the structure and I judge that the licensee will deliver the items outstanding. However, during ONR's assessment, in some areas, it was necessary for the licensee to develop further evidence to substantiate all the claims made.
15. Although the specialist inspector assessment reports have recommendations and guidance for BAESML to include in PCSR2, all recommend that the hold point should be released through issue of the Licence Instrument.

Conclusions

16. To conclude, although a number of FAP items relate to the design substantiation of the main structure, I judge that these are under active management by the licensee. I am broadly satisfied with the claims, arguments and evidence laid down for the proposed activities and supporting documentation.

17. ONR identified no significant shortfalls and I judge, in line with ONR guidance to inspectors, that it would be disproportionate withhold permission for the construction activities.

Recommendation

18. I recommend that the derived powers Licence Instrument (LI 521) is issued to the licensee, giving agreement to commence SRP Activities held by BAESML Phase Hold Point PBC-D58-3 – D58 Main Works.

LIST OF ABBREVIATIONS

ALARP	As low as reasonably practicable
AR	Assessment report
BAESML	BAE Systems Marine Limited
DDC	Devonshire Dock Complex
DDH	Devonshire Dock Hall
DR	Decision Record
DSR	Design Substantiation Report
EIM&C	Enhanced implementation, monitoring and control
FAP	Forward action plan
GIW	Ground improvement works
INA	Internal Nuclear Assurance
INSA	Independent nuclear safety assessment
LC	Licence Condition
LI	Licence Instrument
NSC	Nuclear Safety Committee
NSDC	Nuclear Safety Document Committee
ONR	Office for Nuclear Regulation
OSP	Overarching Strategy & Regulatory Hold Point Control
PCSR1	Pre-construction Safety Report 1
PCSR2	Pre-construction Safety Report 2
PHP	Phase Hold Point
PM	Power Module
RI	Regulatory Issue
SAP	Safety Assessment Principle(s)
SFAIRP	So far as is reasonably practicable
SRP	Site Redevelopment Programme
SSC	Structure, System and Component
TAG	Technical Assessment Guide (ONR)

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1 PERMISSION REQUESTED

19. The Licensee requested ONR's agreement under arrangements made under Licence Condition 19(1) to commence Site Redevelopment Programme (SRP) activities, held by BAE Systems Marine Limited (BAESML) Phase Hold Point (PHP) PBC-D58-3 – D58 main works. (Reference 20)

2 BACKGROUND

20. D58 is a new nuclear facility on the licensed site, to support Dreadnought build and commissioning. ONR has chosen to permission key stages during the build process to ensure that the facility will meet the safety requirements and standards applicable, and that when operational, the risks posed from operations will be controlled as low as reasonably practicable (ALARP)
21. As required under its arrangements, the licensee has requested the ONR's Agreement to commence Site Redevelopment Programme (SRP) activities held by BAE Systems Marine Limited (BAESML) Phase Hold Point (PHP) PBC-D58-3 – D58 main works, Reference 20. The activities are as described in Reference 1 supported by the SRP Overarching Strategy & Regulatory Hold Point Control (OSP), Reference 2, the Pre-Construction Safety Report for the D58 Facility (PCSR1), Reference 3, and the D58 Facility Structure Design Substantiation Report (DSR), Reference 4.
22. The licensee is undertaking a Site Redevelopment Programme across the Devonshire Dock Complex (DDC) site. The SRP is delivering site infrastructure projects in support of the Dreadnought Class Submarine programme. A key part of this is the construction of D58, which will support the installation of the Dreadnought Power Module (PM) into the submarine. The D58 facility will form an annex to the existing Devonshire Dock Hall (DDH) and will interface with the west gable of the DDH in order to accommodate new processes and boat build sequences. D58 is located on the nuclear licensed and authorised sites.
23. The ground conditions in this location were varied and comprised placed fill material, historic backfill and a section of redundant buried dock wall. The licensee achieved the operational and nuclear safety requirements via the completion of ground improvement works (GIWs) in advance of the main construction of the facility. The GIWs were permissioned by ONR via a separate flexible permissioning enhanced implementation, monitoring and control (EIM&C) hold point. For details relating to the GIW, refer to the associated Decision Record (DR) (Reference 5).
24. The licensee will construct the D58 structure on the improved ground, the structure consisting of a monolithic reinforced concrete box, which is protected from the external environment by an insulated cladding system.
25. The licensee's submission scopes out the facility operations. This includes delivery of a Power Module Transport Package into the Receipt Bay by a tractor and trailer. The main crane, which is supported by corbels running the full length of the Main Installation Area, then removes the PM from its transport package and transfers it to the Main Installation Area, where the PM is installed on to the reactor raft. During this operation, the reactor raft spans between a structure referred to as the temporary forward bulkhead and a section of the part submarine hull on the DDH side. The submarine hull is predominantly supported on cradles in DDH with a section that protrudes through a shielded opening into D58 and is supported on a single row of cradles on the D58 slab. Industrial radiography activities are also undertaken, which drive shielding requirements and the facility must provide a clean and environmentally controlled area.
26. In Reference 1, the licensee has defined the phases of the D58 project to comprise:

- Ground improvement Works (GIW) – see Decision Record (DR), Reference 5.
 - D58 main construction works (Nuclear – first structural concrete), defined as commencement of construction of the ground bearing raft slab. (References 1-4 – this permission request)
 - D58 main crane installation works. (PCSR2)
 - Transition to commissioning (Nuclear).
 - Confirm completion of construction and commissioning of D58 as designed (Nuclear) in readiness for transition to handover.
 - Handover for first nuclear use.
27. To enable delivery of this key infrastructure project, ONR agreed that BAESML could split the safety case supporting the construction, known as a Pre-Commencement Safety Report (PCSR), into two phases. Phase one scoped to underpin the design and function of the main construction (PCSR1), with Phase two delivering the pre-commencement safety report (PCSR2) to include the remaining equipment to support safe operation.
28. The licensee has produced an interim PCSR1 to justify and substantiate the engineering for the main building construction, in order to demonstrate that it meets the safety functional requirements identified for all possible fault conditions identified in the safety case.
29. The licensee's PCSR2 update will include the main crane and other equipment in a separate submission to ONR, subject to a separate ONR permission.
30. In line with ONR's principles of enabling regulation (Reference 7), we mapped our regulatory permissions to the licensee's overarching strategy (Reference 2), and developed our regulatory strategy (Reference 8) around the licensee's programme. We did this knowing that the construction did not foreclose options, other than those provided by the main building. Hence, if the licensee provided insufficient justification for the design, there was no regulatory risk to this approach, whilst it enabled the licensee to meet its programme targets.
31. Based on this two-phased safety case approach, ONR's targeted its assessment to gain sufficient understanding of the wider case for operations, and obtain regulatory confidence that the main structure will deliver the safety functional requirements identified in the safety case, when the design and safety case is completed. If the licensee has inadequately designed or substantiated the construction of the main civil structure, it may foreclose opportunities to reduce risks to be ALARP. The commencement of construction will fix aspects of the internal design, which would only be permissioned later, for example; internal layout, fire segregation, crane supports and interfaces with the Devonshire Dock Hall (DDH). Hence, it is necessary for ONR to gain confidence that the licensee has identified all faults that could lead to a potential nuclear safety consequence. To do this, ONR expected the licensee to provide adequate justification and evidence to allow ONR to judge that the construction of this design can proceed.
32. The introduction of nuclear material will be subject to future regulatory oversight, with hold-points identified in line with the permissioning strategy. At this stage, it is necessary to ensure that the licensee has identified all faults that could lead to a potential nuclear safety consequence, and has provided evidence that the design substantiation of the facility structure will deliver the nuclear safety functional requirements (SFRs) placed upon it.
33. The licensee has excluded the nuclear safety risk from the construction hazards impact on adjacent buildings from the scope of PCSR1 activities considered here, and

is subject to controls defined by the licensee's nuclear site licence condition 22 arrangements.

34. In line with ONR's permissioning purposes (Reference 9), ONR defined a regulatory hold point on the project (PBC-D58-3) (Reference 2). All stakeholders agreed this at a level 3 regulatory interface meeting and it is subject to release via a derived power 'Agreement' in accordance with the licensee's LC19 arrangements (Reference 10). When ONR agrees, a derived power Licence Instrument (LI) will be issued to agree to the commencement of construction of the ground bearing slab (nuclear – first structural concrete).

3 ASSESSMENT AND INSPECTION WORK CARRIED OUT BY ONR IN CONSIDERATION OF THIS REQUEST

35. I agree with the licensee's assessment of the nuclear hazard in this facility, namely, the potential for a criticality, resulting in significant radiological consequences to workers and potentially the public. However, for this to happen, the licensee has identified that the power module (PM) needs to be impacted such that the control rods are ejected or the geometry is changed by a significant rearrangement to make a criticality credible. Even then, a significant amount of moderator (e.g. water) would also be needed within the PM nuclear materials for a criticality to occur. The licensee has identified that this is possible due to certain crane drops of the PM, or collapse of the building/crane due to internal or external hazard events. For PCSR1, the focus is the concrete structure, designated as a class 1 nuclear structure, to withstand the postulated events. In addition, the licensee has identified that certain reactor commissioning operations could result in a steam release, which, if of sufficient magnitude, could also challenge the integrity of the building.
36. ONR carried out a programme of work to gain sufficient regulatory confidence to release the hold point through a targeted assessment of the submission and supporting documentation in key specialist areas. The assessments use published ONR Safety Assessment Principles (SAPs), Reference 11, and Technical Assessment Guides (TAGs), Reference 12, to guide regulatory judgement against relevant good practice, and consider whether risks have been reduced SFAIRP. The targeted assessments (identified in the Decision Record Part 1 scope - Reference 6) focussed on the following:
- Fault Studies - The adequacy of the D58 fault schedule and accompanying narrative as presented by PCSR1 (and the supporting documentation).
 - Internal Hazards – Identification and consideration of credible initiating events that can lead to a nuclear safety consequence.
 - External Hazards – Identification and consideration of credible initiating events that can lead to a nuclear safety consequence.
 - Civil Engineering – Sample the adequacy of the design substantiation documentation and underpinning references, where the civil engineering structures are the principal means of ensuring nuclear safety.
 - Mechanical Engineering – The PCSR1 submission does not comprise substantiation of the mechanical plant and equipment. However, where safety functional requirements require withstand at the interface between civil engineering structures and the crane and other key equipment, this is considered.
 - Human Factors – Identification of suitable administrative controls and associated requirements incorporated into the facility design as construction will fix aspects of the physical design (e.g. space for operations, access and egress). These aspects have the potential to foreclose options necessary to reduce risks SFAIRP.

37. The licensee has considered any potential nuclear hazards to other site operations from construction of D58 separately. ONR has judged that we focus our regulatory attention in targeting the class 1 D58 structure; hence, I have not considered them within the scope of this report.
38. ONR regulates conventional health and safety on nuclear sites (licensed and authorised defence sites). ONR's policy (Reference 9) is to follow the Health and Safety Executive's (HSE) [approach to permissioning regimes](#) to permission certain conventional (non-nuclear) high-risk hazardous activities undertaken on nuclear sites. This specifically includes sites where the COMAH Regulations are applicable, and those sites requiring a licence granted under the Explosives Regulations. As the construction of the facility only relates to conventional construction risks, ONR has not undertaken any assessment work for this permission.
39. The objective of the specialist inspectors' assessments was to sample the evidence and so gain regulatory confidence that the licensee has a sufficiently mature design, which will reduce the nuclear safety risk of the future proposed activities SFAIRP and not foreclose any significant options by its construction at this project phase.

4 MATTERS ARISING FROM ONR'S WORK

40. The licensee claimed to have provided a design supported by an interim safety case that provides sufficient evidence to justify the identified safety functional requirements from the main building structure.
41. Due to the strategic importance and programme pressures associated with this project, in agreement with ONR, the licensee initially provided documentation for early engagement that had not completed all internal governance processes. Subsequently, ONR received the approved documentation. This approach resulted in significant additional regulatory effort and regulatory queries.
42. I judge that in some cases, the licensee would have addressed the queries in the approved documentation. However, I also judge that a significant number of the regulatory queries required the licensee to produce additional evidence to support their claims. I consider that this is a shortfall in the quality of the licensee's submission. As a result, two of the assessment reports produced rated the quality of the licensee's submission as AMBER, though once the licensee had provided additional evidence, the inspectors determined that the final result was adequate.
43. Despite the additional evidence requirements, ONR completed its assessment sooner in support of BAESML's schedule, though ONR expended significant additional resource. The licensee had already agreed to this approach and recognised the extra resources utilised.
44. Specialist Inspectors produced assessment reports (ARs) (References 13 to 18) in the targeted areas. The ARs record the outcomes and judgements of the specialist inspectors, via findings and recommendations, which I have not repeated in detail here, but I have summarised them below, in terms of their significance to the regulatory decision.
45. I have raised Regulatory Issues (RIs) to record and track these recommendations to closure during the project, at the appropriate point in the schedule. The recommendations from the ARs are reconciled with actions placed on the licensee within the numbered RIs raised, as appropriate:
 8242. Those that relate to completion of the licensee's forward action plan (FAP) in support of the main concrete structure.

8243. Those that relate to deliverables as part of the PCSR submission, which will be completed as part of the next safety case submission (PCSR2).
8244. Those that relate to future phases of the project, where the design will not be completed, but that must be adequately justified in the design prior to first nuclear use of the building.
46. In addition, there were a number of areas, where ONR identified learning opportunities where opportunities for improvements. I will provide these to the licensee in a separate advice and guidance letter. The licensee welcomes feedback and I will offer to support a lessons learned workshop in order to support de-risking any potential for regulatory impact to the licensee's future project plans, in line with ONR's policy on enabling regulation (Reference 7).
47. I have considered the recommendations and judged that many resulted from the maturity of the design and supporting safety case. The recommendations principally identify areas where ONR considers that the licensee needs to provide additional justifications and evidence in support of the safety case (PCSR2), prior to the next regulatory hold point or later (RI 8243 and 8424). There are no nuclear safety hazards within D58 until first nuclear use; hence, I judge this is a targeted and proportionate means to ensure the licensee considers the recommendations.
48. In regard of the recommendations which fall under RI 8242, only two recommendations fall directly under this category:
- Mechanical Engineering AR (Reference 17) Recommendation 3 the licensee should adequately complete its own forward action plan for the D58 mechanical handling structures, systems and components.
 - Civil Engineering AR (Reference 14) Recommendation 3 The Licensee should demonstrate, through the delivery of its forward action plan and future PCSR2 submission (and relevant underpinning documents), that the D58 structure has adequate margin against the final imposed plant and equipment interface loads for all design basis loads.
49. In addition, Recommendation 4 of the Civil Engineering AR (Reference 14) ONR should undertake a targeted licence condition 19 and 20 compliance inspection during the construction phase of D58 to:
- Seek evidence that the forward action plan provided is being adequately controlled and implemented, and that sufficient time has been allocated to allow the completion of designs and drawings, procedures and quality instructions and necessary contractor preparations.
 - Gain adequate confidence that the works are being constructed in accordance with the design intent as required by the safety case and that the materials used and construction methodologies adopted have not undermined the design assumptions made.
50. The licensee has developed a forward action plan, including some items that relate to design and substantiation activities of the main building structure. The forward action plan requires the completion of these items during BAESML's main build schedule. The FAP items include those that relate to design and substantiation activities of the main building structure. I have considered the outstanding work items, in consultation with the civil engineering specialist inspector and developed a proportionate and targeted approach to regulatory oversight of these items, below. This aligns with Recommendation 4 in the civil engineering specialist inspector's AR above.

51. I have gained further regulatory confidence from the fact that the licensee's proposal and supporting documents have been subject to the licensee's due processes, receiving significant and meaningful scrutiny, including;
- consideration by the Nuclear Safety Document Committee (NSDC) (Reference 19);
 - advice sought from the Nuclear Safety Committee (NSC) (Reference 21) and
 - independent nuclear safety assessment (INSA) (included in Reference 22).
52. The licensee's internal assurance processes included a hold point readiness review panel, which initially identified additional actions prior to confirming internal hold point release (Reference 23). The licensee's own Internal Nuclear Assurance team has provided a confirmation of readiness report (Reference 22), providing additional confidence in the process outcomes and the licensee's readiness to proceed with construction of the main structure.
53. From evidence provided in the specialist inspector's assessment reports, I consider that the licensee has delivered the evidence required to substantiate the claims made on the structure. Two assessment reports rated the initial licensee submissions as falling short of our expectations. ONR raised regulatory queries to seek further evidence of claims, and ONR's specialists provided advice and guidance to the licensee to deliver an adequate evidence base to substantiate all the claims made. I judge that the licensee will adequately deliver the items outstanding. ONR will continue to monitor progress under targeted regulatory engagement, as appropriate.
54. Although the specialist inspector assessment reports have recommendations and guidance for BAESML to include in PCSR2, all recommended that the hold point should be released through issue of the Licence Instrument.
55. Balancing these factors, whilst noting that there is no nuclear safety hazard within D58 until first nuclear use and that there is a further regulatory hold point defined prior to crane installation, I have identified proposed enhanced regulatory oversight, prior to the next hold point, during construction, to be delivered by;
- Reporting at project level 4 Regulatory Interface Forums (RIF), which will include some regulatory oversight of evidence provided to support the safety case and reporting on the FAP deliver and ONR regulatory issues raised in the ARs.
 - Planned Internal Nuclear Assurance (INA) activities from the licensee's internal regulator, in relation to the delivery of the FAP. The internal regulator who will also report findings to ONR, as appropriate,
 - An ONR compliance inspection on implementation of arrangements made under Licence Condition (LC) 19/20, including a civil engineering specialist inspector, as appropriate. This will inspect evidence of control of change on the design during construction and the governance regarding delivery of the forward action plan.
56. Under the licensee's arrangements, ONR can insert hold points in the project, as it considers necessary. Notwithstanding this derived power, ONR can also use primary powers to halt the licensee at any time, if considered necessary. Hence, I consider that the proposed activities provide proportionate regulatory strategy for the incomplete design substantiation elements for the main structure adequate regulatory oversight, up to the next hold point.
57. I have consulted with the Environment Agency (Reference 26) and the Defence Nuclear Safety Regulatory (Reference 27) to ensure joined-up regulation in line with

the relevant memoranda of understanding. Neither regulator has any objection to ONR Issuing the Permission

5 CONCLUSIONS

58. To conclude, although a number of FAP items identified that relate to the design substantiation of the main structure, I judge that these are under active management by the licensee, I am broadly satisfied with the claims, arguments and evidence laid down for the proposed activities and supporting documentation.
59. Although there are outstanding FAP items and ONR Recommendations (captured in Regulatory Issues), I judge that BAESML's construction of the main building structure does not foreclose options regarding the provision of suitable and sufficient safety measures to ensure that BAESML can demonstrate that the risks from the proposed operations will be ALARP, when the final design and safety case are completed.
60. ONR identified no significant shortfalls and I judge, in line with guidance provided in Reference 25, that it would be disproportionate withhold permission for the construction activities.

6 RECOMMENDATIONS

61. I recommend that the derived powers Licence Instrument (LI 521) is issued to the licensee, giving agreement to commence SRP Activities held by BAESML Phase Hold Point PBC-D58-3 – D58 Main Works.

7 REFERENCES

1. BAESML - SDCC-NSS-20-023: D58 Civil, Structural and Architectural rev.2, SDCC Approval given 10th August 2020, CM9: 2020/264267
2. BAESML - SRP Overarching Strategy & Regulatory Hold Point Control Revision 2 Issue 4 (TC 0000498627) – CM9: 2020/264267
3. BAESML - eDMS 1824730, Pre-Construction Safety Report for the D58 Facility, Issue 1, July 2020, CM9 Ref. 2020/241756
4. BAESML - TC 0000604479, D58 Facility Structure Design Substantiation Report, Issue 1, 07/08/2020, CM9: 2020/241143
5. ONR, BAESML - D58 Facility Ground Improvement Works, ONR-OFD-DR-17-011, Revision 1, CM9 Ref. 2017/450567.
6. ONR, BAESML - D58 Main Works, ONR-OFD-DR-18-040, Revision 0, 23/09/19, CM9 Ref. 2019/27237.
7. ONR. Holding industry to account and influencing improvements – a guide to enabling regulation in practice. February 2018. <http://www.onr.org.uk/documents/2018/guide-to-enabling-regulation-in-practice.pdf>
8. ONR, BAESML - Site Redevelopment Programme Overarching Strategy, ONR-OFD-DR-18-039, Revision, Version 0, Date 20/3/2019, CM9: 2019/27223.
9. *ONR Guide – The Purpose and Use of Permissioning - NS-PER-GD-001. Revision 4.* March 2020. <http://www.onr.org.uk/operational/assessment/index.htm>
10. BAESML - PI Nuclear Safety 008, Control of Construction, Installation, Commissioning and/ or Modification of Site Facilities, Issue 6.1, 17.12.2019, CM9: 2020/254289
11. *Safety Assessment Principles for Nuclear Facilities.* 2014 Edition, Revision 1. January 2020. <http://www.onr.org.uk/saps/index.htm>
12. ONR Permissioning inspection - Technical assessment guides. http://www.onr.org.uk/operational/tech_asst_guides/index.htm.
13. ONR Assessment Report – ONR-OFD-AR-20-019 - Pre-Construction Safety Report for the D58 Facility – Fault Studies Assessment – CM9: 2020/225945
14. ONR Assessment Report – ONR-OFD-AR-20-023 – Pre-Construction Safety Report 1 - Main Construction Works Civil Engineering Assessment – CM9: 2020/215618
15. ONR Assessment Report – ONR-OFD-AR-20-016 – Internal Hazards Assessment of the D58 Installation Facility –Main Works PCSR – CM9: 2020/173628
16. ONR Assessment Report – ONR-OFD-AR-20-036 – Barrow D58 PCSR1 Assessment – External Hazards – CM9: 2020/242936
17. ONR Assessment Report – ONR-OFD-AR-20-020 – Mechanical Engineering assessment of the D58 facility Pre-Construction Safety Report (PCSR) 1 – CM9: 2020/233756
18. ONR Assessment Report – ONR-OFD-AR-20-041 – Human Factors PCSR1 Assessment – CM9: 2020/246199
19. BAESML - 163rd NSDC Minutes Issue 1, meeting held 5th August 2020, CM9: 2020/264267
20. BAESML - Letter - TC0000690223, Issue 1, “Request for Agreement to commence SRP Activities held by BAESML Phase Hold Point PBC-D58-3 – D58 Main Works – in

- accordance with arrangements made under Licence Condition 19(1)". CM9: 2020/264267.
21. BAESML - NSC 199 Minutes, meeting held 1st July 2020, CM9: 2020/216596
 22. BAESML - Project Hold Point Control Form PHP-PBC-D58-3 Confirm readiness for commencement of D58 main construction works, Issue 2, 4/9/20, TC: 0000626197, CM9: 2020/264267
 23. BAESML - TC 0000694886, Revision 4, PHP-PBC-D58 3 Hold Point Release Committee Meeting Notes / Actions, 3/9/2020, CM9: 2020/0264267
 24. BAESML - 58 Facility DSR/PCSR/SCAF - Forward Action Tracker Release Plan, TC 0000684366, version 2.0, CM9: 2020/264267
 25. ONR. Risk informed regulatory decision making. June 2017.
<http://www.onr.org.uk/documents/2017/risk-informed-regulatory-decision-making.pdf>
 26. e-mail - **Jake Suman** - Environment Agency confirming no objections to D58 Permissioning hold point release - 25 August 2020, CM9: 2020/0254238
 27. e-mail – **Jason Smith** – DNSR - confirming no objections to D58 Permissioning hold point release - 18 August 2020, CM9: 2020/0254240