**EXECUTIVE SUMMARY**

**Approval of Hunterston B Emergency Plan**

**Permission Requested**

EDF Energy Nuclear Generation Limited (NGL) the operator and licensee of Hunterston B nuclear power station, has written to the Office for Nuclear Regulation (ONR) requesting the Approval of the Hunterston Nuclear Power Station Emergency Plan. The request in in accordance with NGL’s arrangements made under Licence Condition (LC) 11(3): Emergency arrangements.

**Background**

The site emergency plan for Hunterston B is an approved document under LC 11(2) and cannot be altered or amended without ONR’s approval under LC 11(3).

Both reactors at Hunterston B have been permanently shut down and are in the process of being defueled. NGL has reviewed the radioactive risk associated with the change in operations at Hunterston B, in accordance with the requirements of the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19).

To reflect the change in the potential radiological consequences of an accident or emergency at Hunterston B NGL has revised the site emergency plan. The key changes include:

* Removing the requirement to administer stable iodine tablets as a protective action on-site and off-site in the Detailed Emergency Planning Zone (DEPZ).
* Alignment of the on-site emergency plan with the revised DEPZ.
* Administrative changes and updates.

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

ONR has assessed NGL’s site emergency plan for Hunterston B, which reflects the change in plant state and entry into defueling operations. The review was supported by advice from ONR Fault Studies and Radiological Protection specialist inspectors. The assessment focused on confirming that:

* The Hunterston B emergency plan includes the information required by REPPIR19 Schedule 6 Part 1 (information to be included in an operator’s emergency plan).
* The changes to the plan are consistent with the change in hazard and consequence associated with the change in operations.

**Matters arising from ONR's work**

There are no matters that would prevent approval of the Hunterston B site emergency plan.

**Conclusions**

ONR is satisfied that:

* Revision of the DEPZ and removal of advice to administer stable iodine as an urgent protective action is consistent with the change in hazard and consequences of an accident or emergency at Hunterston B.
* The requirements of REPPIR19 following a ‘material change’ in the work with ionising radiation at Hunterston B have been complied with.
* Hunterston B’s emergency response will not be adversely affected by the amendments to the site emergency plan.

**Recommendation**

I recommend that ONR issues Licence Instrument 574 under LC 11(3) for Nuclear Site Licence Sc.13, giving ONR’s Approval of the Hunterston B site emergency plan.

**LIST OF ABBREVIATIONS**

AGR Advanced Gas Cooled Reactor

DEPZ Detailed Emergency Planning Zone

HOW2 (Office for Nuclear Regulation) Business Management System

HNB Hunterston B

LC Licence Condition

ONR Office for Nuclear Regulation

REPPIR19 Radiation (Emergency Preparedness and Public Information) Regulations 2019

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1. PERMISSION REQUESTED
2. The licensee has requested (Ref. 1) the approval of site emergency plan (Ref. 2) for the Hunterston B (HNB) nuclear power station, in accordance with its arrangements made under Licence Condition (LC) 11(3): *Emergency Arrangements.*
3. BACKGROUND
4. Power generation at HNB has now stopped, both reactors have been permanently shut down and defueling has started.
5. The change in operation meets the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19) definition of a ‘material change’ to the work with ionising radiation. In accordance with REPPIR19, the licensee has reviewed and revised the Hazard Evaluation and Consequence Report for HNB. The assessment identifies a reduction in hazard at HNB but shows that there is still the potential for a radiation emergency to occur and that an operator’s emergency plan is still required.
6. As a result of the new assessment the licensee has amended the HNB emergency plan under REPPIR, Regulation 10(9), to reflect the change in the potential consequences of an accident or emergency. The important changes to the plan consist of:

* Change in the extent of the Detailed Emergency Planning Zone (DEPZ).
* Removing the requirement to administer stable iodine tablets as a protective action on-site and off-site in the DEPZ.
* Minor administrative changes and updates.

1. The emergency plan is an approved document under LC 11(2) and cannot be altered or amended without ONR’s approval under LC 11(3).
2. The current HNB emergency plan was revised in 2021 to comply with REPPIR 19. It was approved by ONR on 19 March 2021 (Licence Instrument No: 564) and came in to effect on 31 March 2021.
3. ASSESSMENT AND INSPECTION WORK CARRIED OUT BY ONR IN CONSIDERATION OF THIS REQUEST
4. I have considered the licensee’s request to Approve the HNB emergency plan in accordance with ONR guidance (Ref. 3) and the REPPIR 19 Approved Code of Practice (Ref. 4).
5. HNB’s response to an accident or emergency is collectively defined in the station’s emergency plan and emergency handbook. The emergency plan contains the basic principles of the stations arrangements for dealing with an emergency and the handbook contains the details of personnel, equipment and procedures necessary for the practical implementation of the emergency plan.
6. It is not uncommon or novel for a licensee to update their emergency plans. However, HNB is the first Advanced Gas Cooled Reactor (AGR) station to move from power generation to defueling. I have therefore targeted ONR’s assessment on confirming that:

* The HNB emergency plan includes the information required by REPPIR19 Schedule 6 Part 1 (information to be included in an operator’s emergency plan).
* The changes to the plan are consistent with the change in hazard and consequence associated with the change in operations.

1. The licensee uses a generic model to produce the emergency plans and handbooks for the fleet of reactors. The HNB emergency plan is based on a new generic emergency plan for a defueling site. The information required by REPPIR19 schedule 6 part 1, is presented collectively in the emergency plan and handbook. The licensee has a REPPIR19 compliance document, which identifies where the REPPIR19 schedule 6 part 1 is located.
2. I sampled (Ref. 5) information contained in the generic emergency plan for a defueling site, the emergency handbook and supporting documents against the requirements of REPPIR19 schedule 6 part 1. I was generally satisfied that the information met the requirements of REPPIR19.
3. Reference 6 reports the findings of the fault studies assessment of the licensee’s hazard evaluation for HNB made under REPPIR19 Regulation 4.
4. The assessment considered the hazards associated with defueling activities and focused on whether the hazard evaluation was well founded, whether the full range of hazards has been considered, and whether a reasonable output from the hazard evaluation is achieved.
5. The assessment concluded that the licensee’s hazard evaluation was adequate and the requirements of REPPIR19 Regulation 4 have been met.
6. Reference 7 reports the findings of radiological consequences assessment of the licensee’s hazard evaluation and consequence assessment for HNB made under REPPIR19 Regulation 5.
7. The assessment considered the radiological consequences of shut down reactor and defueling faults; the licensee’s evaluation of the minimum geographical extent of the DEPZ for HNB and advice on urgent protective actions.
8. The assessment concluded that the licensee’s consequence assessment was adequate and the requirements of REPPIR19 Regulation 5 have been met. The assessment supported the licensee’s determination of the minimum geographical extent of the DEPZ and advice on urgent protective actions.
9. I have sampled the HNB emergency plan, and I am satisfied that:

* The structure and content are consistent with the licensee’s generic emergency plan for a defueling site.
* It contains the relevant site specific information.
* It adequately identifies the geographical extent of the DEPZ.
* Advice on urgent protective actions is appropriate noting the removal of the requirement to administer stable iodine tablets.
* The amendments to the site emergency plan will not adversely affect HNB’s emergency response.

1. ONR’s Civil Nuclear Security and Safeguards site inspector for HNB has confirmed (Ref. 8) that they do not have any objections to the approval of the HNB site emergency plan.
2. The Scottish Environment Protection Agency site inspector for HNB has conferment (Ref. 9) that they do not have any objections to the approval of the HNB site emergency plan.
3. MATTERS ARISING FROM ONR’S WORK
4. There are no outstanding matters arising from ONR’s assessment that would prevent approval of the HNB site emergency plan.
5. CONCLUSIONS
6. I have assessed the licensee’s site emergency plan for HNB, which reflects the change in plant state and entry into defueling operations.
7. I am satisfied that:

* Revision of the DEPZ and removal of advice to administer stable iodine as an urgent protective action is consistent with the change in hazard and consequences of an accident or emergency at HNB.
* The requirements of REPPIR19 following a ‘material change’ in the work with ionising radiation at HNB have been complied with.
* HNB’s emergency response will not be adversely affected by the amendments to the site emergency plan.

1. In conclusion, there are no matters that would prevent ONR approving the HNB site emergency plan.
2. RECOMMENDATIONS
3. I recommend that ONR issues Licence Instrument 574 under LC 11(3) for Nuclear Site Licence Sc.13, giving ONR’s Approval of the HNB site emergency plan.
4. REFERENCES
5. HNB Letter for Submission of Site Emergency Plan for Approval - Nov 2022 NSL HNB50519R. CM9 2022/74369
6. HNB Emergency Plan - HPS\_EP- revision 23. CM9 2022/74371
7. ONR Guide – The Purpose and Use of Permissioning - NS-PER-GD-001 Revision 6. October 2022. <http://www.onr.org.uk/operational/assessment/index.htm>
8. Approved Code of Practice and Guidance For The Radiation (Emergency Preparedness and Public Information) Regulations 2019, http://www.onr.org.uk/documents/2019/reppir-19-acop-and-guidance.pdf
9. ONR-OFD-CR-22-599 - Generic Emergency Plan for a defueling site - 15 November 2022 - S Minton. CM9 2022/68629
10. ONR-OFD-AR-22-018 - Fault Studies - Fault Studies Assessment of Hazard Evaluation for Hunterston B Defuelling Activities - M Drummond - August 2022. CM9 2022/46078
11. ONR-TD-AR-22-006 - Assessment Report (AR) - Assessment of Hunterston B Defueling Fault Dose Consequences for REPPIR compliance. CM9 2022/42067
12. Security Inspector’s advice on Approval of Hunterston B Emergency Plan. E-mail dated 24 November 2022. CM9 2022/69489
13. Scottish Environment Protection Agency advice on Approval of Hunterston B Emergency Plan. E-mail dated 23 November 2022. CM9 2022/69488