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| ONR Project assessment report  Hinkley Point B – Approval of site emergency plan |



ONR Project assessment report

**Project name**: Hinkley Point B

**Report title**: Approval of site emergency plan

**Dutyholder/Applicant**: EDF Energy Nuclear Generation Limited

**Authored by**: Project Inspector, ONR

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# Executive summary

**Title**

Hinkley Point B – approval of site emergency plan

**Permission requested**

EDF Energy Nuclear Generation Limited (the licensee) has requested the Office for Nuclear Regulation’s (ONR) approval of an amendment to the site emergency plan for the Hinkley Point B (HPB) nuclear power station.

**Background**

Since the end of power generation, the licensee has progressively reduced the risk of an accident or emergency at HPB by starting to remove fuel from the reactors, retiring non-essential plant and reducing the inventories of associated services, including combustible gases, oils and other chemicals.

The licensee has completed the removal of fuel from reactor 4 and placed the reactor in to a passive, depressurised state with an air atmosphere.

The licensee considered this to be an appropriate time to review its emergency response arrangements to ensure that they are appropriate for the risk position for the site. Subsequently, the licensee proposes to remove the reactor 4 desk engineer from the minimum emergency scheme staffing requirements.

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

Based on similar changes that have already been implemented at Hunterston B, we judged it proportionate to undertake the following, in accordance with the regulatory permissioning strategy:

* Assessment of the justification of the changes to the emergency arrangements;
* Observation of a 'proof of concept' emergency exercise; and
* Review of HPB’s readiness to implement the amended emergency arrangements.

The Environment Agency were consulted and had no objections to ONR approving the HPB emergency plan.

**Matters arising from ONR's work**

There are no outstanding matters arising from our assessment and inspection activities.

**Conclusions**

Based on the evidence sampled we are satisfied that the licensee has:

* Provided a suitable justification for the changes to the HPB emergency arrangements;
* Adequately demonstrated a 'proof of concept' emergency exercise; and
* Demonstrated that HPB is ready to implement the amended emergency arrangements.

To conclude, we are content that HPB’s capability to respond to an accident or emergency will not be adversely affected by the removal of a reactor desk engineer from the minimum emergency scheme staffing requirements.

**Recommendation**

ONR should issue licence instrument 574 under LC 11(3) for nuclear site licence 62C to approve the HPB site emergency plan.

Table 1: List of abbreviations.

|  |  |
| --- | --- |
| Term/Acronym | Description |
| CCR | Central Control Room |
| HPB | Hinkley Point B |
| LC | Licence Condition |
| ONR | Office for Nuclear Regulation |
| R4 | Reactor 4 |
| RDE | Reactor Desk Engineer |

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# Permission requested

1. EDF Energy Nuclear Generation Limited (the licensee) has requested [1] ONR’s approval of an amendment to the site emergency plan [2] for the Hinkley Point B (HPB) nuclear power station.

# Background

1. The site emergency plan, together with the site emergency handbook, defines HPB’s emergency response arrangements. The emergency plan describes the response and the emergency handbook provides the detailed instructions and guidance.
2. The emergency plan is an approved document under Licence Condition (LC) 11(2), which means that the licensee cannot alter or amend the plan without ONR’s approval.
3. The plan was last revised in September 2023 to incorporate changes to the off-site detailed emergency planning zone associated with the end of power generation. ONR approved the revised plan on 09 November 2023 (Licence Instrument 573) and it was implemented on 22 November 2023.
4. Since the end of power generation, the licensee has progressively reduced the risk of an accident or emergency at HPB by starting to remove fuel from the reactors, retiring non-essential plant and reducing the inventories of associated services, including combustible gases, oils and other chemicals.
5. The licensee has now removed all of the fuel from reactor 4 (R4) and put the reactor in to a passive, depressurised state, with an air atmosphere.
6. The licensee considered this to be an appropriate time to review its emergency response arrangements to ensure that they are appropriate for the risk position for the site. Subsequently, the licensee proposes to remove the R4 reactor desk engineer (RDE) from the minimum emergency scheme staffing requirements.

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

1. In accordance with the regulatory permissioning strategy (PR-01863), ONR’s assessment and inspections have considered the following:

* Assessment of the justification of the changes to the emergency arrangements;
* Observation of a 'proof of concept' emergency exercise; and
* Review of HPB’s readiness to implement the amended emergency arrangements.

## Justification

1. The site emergency plan specifies the minimum emergency scheme staffing requirements for the site, which for the central control room (CCR) comprises of:

* Shift Manager
* Central Control Room Supervisor
* Two Reactor Desk Engineer’s (one for each reactor)

1. The emergency response actions for the CCR team are set out in the site emergency handbook. Specific responsibilities are defined for an ‘affected’ RDE and an ‘unaffected’ RDE. The term ‘affected’ refers to a reactor which is receiving indications of fault conditions on the plant that require a response.
2. The licensee’s justification for removing the R4 RDE from the minimum emergency scheme staffing requirements is presented in a management of change proposal [3]. The licensee has not identified any credible scenarios that would require the R4 RDE to fulfil the role of an ‘affected’ RDE following R4 being declared fuel free and reaching a passive state. So, the R4 RDE would only fulfil the role of the unaffected desk engineer.
3. The justification is based on a task analysis for both routine and emergency response duties, with R4 fuel free and in a passive state. In an emergency, the key role of the unaffected RDE is to control and operate the unaffected reactor. The analysis demonstrates that the emergency duties for the unaffected RDE are largely removed and any that remain can be dispositioned across remaining CCR personnel.
4. We are satisfied that the licensee has adequately considered HPB’s emergency response to credible accidents and emergencies that could occur, based on the station safety case. We are content that the licensee has performed a proportionate task analysis to demonstrate that the emergency response activities are achievable with the revised emergency scheme.

## Observation of training exercise

1. We observed [4] a shift training emergency exercise performed using HPB’s proposed emergency arrangements.
2. We were satisfied that the exercise scenario was representative of the faults which could occur at HPB during defueling and that there was sufficient challenge to test its emergency response.
3. We did not observe any evidence that the proposed changes to HPB’s emergency arrangements would have any detrimental effect on the station’s response.

## Readiness review

1. In accordance with their arrangements for changing the emergency arrangements, [5] the licensee produced a quality plan to track and record the activities that need to be completed for the implementation of the revised emergency arrangements.
2. The licensee provided evidence to demonstrate that the content of the quality plan had been subject to an appropriate level of review and adequate control and governance of its implementation. The arrangements [5] and their implementation are the subject of a level 4 regulatory issue ([RI-12330](https://wired.crm11.dynamics.com/main.aspx?appid=58b7bb57-c806-ec11-b6e5-00224841dad4&pagetype=entityrecord&etn=can_regulatoryissue&id=34aa79e8-9914-4516-878e-1d73f033a3d2)) raised during a recent inspection on the topic of emergency equipment at HPB ([IR-53206](https://wired.crm11.dynamics.com/main.aspx?appid=58b7bb57-c806-ec11-b6e5-00224841dad4&pagetype=entitylist&etn=can_inspection&viewid=e8c665f9-472a-ef11-840a-6045bdfbd0f4&viewType=4230)). For the purposes of this permission, we are content that the arrangements and their use are suitable and sufficient to support the permission sought. Observations made during this permissioning will be linked to [IR-53206](https://wired.crm11.dynamics.com/main.aspx?appid=58b7bb57-c806-ec11-b6e5-00224841dad4&pagetype=entitylist&etn=can_inspection&viewid=e8c665f9-472a-ef11-840a-6045bdfbd0f4&viewType=4230).
3. The quality plan identifies a number of engineering changes that need to be completed to put the reactor into a passive state allowing the desk engineer to be released. We sampled EC 374298 [6], which removes the existing limits and conditions on the reactor atmosphere and permits an unconditioned air atmosphere in a defueled reactor. The licensee provided evidence [7] to demonstrate that the actions associated with the engineering change have been completed. In addition, the licensee has confirmed [8] that all of the pre-requisite actions identified on the quality plan have been completed.
4. Based on the evidence provided, we are satisfied that the licensee has completed all of the activities necessary to allow the reactor 4 desk engineer to be removed from the emergency scheme.

## Independent nuclear assurance

1. The licensee’s independent nuclear assurance has undertaken assurance of activities supporting the proposed change to HPB’s emergency arrangements. They have confirmed [9] that they have no concerns with the removal of the R4 desk engineer from the emergency scheme.

## Civil nuclear security

1. Our HPB security inspector was consulted on the proposed changes to HPB’s emergency plan. They confirmed [10] that they had no objections to us approving the HPB emergency plan.

## Engagement with other governmental agencies

1. We consulted the Environment Agency on the proposed changes to HPB’s emergency plan. They confirmed [11] that they had no objections to us approving the HPB emergency plan.

# Matters arising from ONR’s work

1. There are no outstanding matters arising from our assessment and inspection activities.

# Conclusions

1. Based on the evidence sampled we are satisfied that the licensee has:

* Provided a suitable justification for the changes to the HPB emergency arrangements;
* Adequately demonstrated a 'proof of concept' emergency exercise; and
* Demonstrated that HPB is ready to implement the amended emergency arrangements.

1. To conclude, we are content that HPB’s capability to respond to an accident or emergency will not be adversely affected by the removal of a reactor desk engineer from the minimum emergency scheme staffing requirements.

# Recommendations

1. ONR should issue licence instrument 574 under LC 11(3) for nuclear site licence 62C to approve the HPB site emergency plan.

# References

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| [1] | *HPB request for approval of site emergency plan NSL HPB 51476 R 26 November 2024 ONRW-2019369590-15053.* |
| [2] | *Hinkley Point B Nuclear Power Station Defueling Emergency Plan, HINB/EHB/SEC/01, Revision 016, November 2024, ONRW-2019369590-15009.* |
| [3] | *HPB/MOC/478, Release of reactor 4 desk engineer from a fuel free reactor, ONRW-2019369590-15011.* |
| [4] | *Contact Record, Hinkley Point B – observation of shift exercise ‘Butcher’, 05 March 2024, ONR-OFD-CR-23-626, CM9 2024/10489.* |
| [5] | *BEG/ICP/OPSV/EPG/035 Revision 000, Implementation of changes to the emergency arrangements, ONRW-2019369590-15551.* |
| [6] | *EC 374298 safety case to remove the moisture and other coolant conditioning limits for a defuelled reactor in air ONRW-2019369590-15550.* |
| [7] | *EC 374298 AMS screenshot ONRW-2019369590-15549.* |
| [8] | *HINB/QP/1093 Reactor 4 RDE Removal Quality Plan, signed up to 08 January 2025 ONRW-2019369590-15990.* |
| [9] | *EDF Independent Nuclear Assurance - release of R4 desk engineer assurance activities, ONRW-2019369590-15758.* |
| [10] | *ONR security inspectors notice of no objection to approval of Hinkley Point B Emergency Plan - email dated 09 December 2024 ONRW-2019369590-15613.* |
| [11] | *Environment Agency - notice of no objection to approval of Hinkley Point B Emergency Plan - email dated 28 November 2024 ONRW-2019369590-15256.* |