



Office for Nuclear Regulation (ONR) Quarterly Site Report for Hunterston B

Report for period 01 October 2016 to 31 December 2016

Foreword

This report is issued as part of ONR's commitment to make information about inspection and regulatory activities relating to the above site available to the public. Reports are distributed quarterly to members for the Hunterston Site Stakeholder Group (SSG) and are also available on the ONR website (<http://www.onr.org.uk/llic/>).

Site inspectors from ONR usually attend Hunterston SSG meetings and will respond to any questions raised there. Any person wishing to enquire about matters covered by this report should contact ONR.

TABLE OF CONTENTS

1	INSPECTIONS	3
2	ROUTINE MATTERS.....	3
3	NON-ROUTINE MATTERS.....	4
4	REGULATORY ACTIVITY	4
5	NEWS FROM ONR.....	5

1 INSPECTIONS

1.1 Dates of inspection

1. The ONR nominated site inspector made inspections, supported where appropriate by specialist inspectors, on the following dates during the quarter:

3 – 5 October 2016
25 – 27 October 2016
8 – 10 November 2016
5 – 8 December 2016

2. ONR's civil nuclear security inspectors undertake quarterly inspections at Hunterston B. The quarter 4 planned inspection was undertaken on:

14 – 17 November 2016

2 ROUTINE MATTERS

2.1 Inspections

3. Inspections are undertaken as part of the process for monitoring compliance with:

- The conditions attached by ONR to the nuclear site licence granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
- The Energy Act 2013;
- The Health and Safety at Work Act 1974 etc. (HSWA74); and
- Regulations made under HSWA74, for example the Ionising Radiations Regulations 1999 (IRR99) and the Management of Health and Safety at Work Regulations 1999 (MHSWR99).

4. The inspections entail monitoring licensee's actions on the site in relation to incidents, operations, maintenance, projects, modifications, safety case changes and any other matters that may affect safety. The licensee is required to make and implement adequate arrangements under the conditions attached to the licence in order to ensure legal compliance. Inspections seek to judge both the adequacy of these arrangements and their implementation.

5. In this period, routine inspections of Hunterston B covered the following:

- Operating Rules
- Operational Records
- Emergency arrangements
- Control and supervision

6. In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. However, where improvements were considered necessary, the licensee made satisfactory commitments to address the issues, and the site inspector will monitor progress during future visits. Where necessary, ONR will take formal regulatory enforcement action to ensure that appropriate remedial measures are implemented to reasonably practicable timescales.

7. In addition to our compliance inspections based on the conditions attached to the nuclear site licence, ONR inspectors also inspect operating reactors against safety

related systems. Each site has a safety case that demonstrates how it operates safely. For advanced gas cooled reactors, each of approximately thirty key systems will be inspected against the claims made upon them by the safety case. The aim is to systematically inspect all the significant safety related systems within a five-year cycle (six per year). ONR believes that this will provide more robust assurances of the site's safe operation and how the safety case is being implemented.

8. During this quarter, there were two system based inspections undertaken on the station. During an inspection of the seawater system on 3 – 5 October 2016, the ONR inspection team considered that the system is being maintained and operated in accordance with the requirements of the safety case. During an inspection of the solid and gaseous radwaste systems on 6 – 8 December 2016, the ONR inspection team considered that the system is being maintained and operated in accordance with the requirements of the safety case.

3 NON-ROUTINE MATTERS

9. Licensees are required to have arrangements to respond to non-routine matters and events. ONR inspectors judge the adequacy of the licensee's response, including actions taken to implement any necessary improvements.
10. Licence Condition 7 requires licensees to make and implement adequate arrangements for the notification, recording, investigation and reporting of incidents occurring on the site.
11. During this period, ONR undertook a follow-up inspection into an event that occurred on 2 October 2016, in relation to the unavailability of two 50V battery chargers. In accordance with its arrangements the station entered a one-hour technical specification action condition for both units and invoking an operational alert. Suitable battery charger capability was restored during this period, which avoided the need to shutdown. ONR specialists have examined the station's investigation and considered that appropriate learning had been derived from the incident, and that the decisions taken by the control room were appropriate and conservative.
12. Also during this period, the station reported an incident that occurred on 13 December 2016 in which a pipe hanger spring support sheared, dropping approximately 30ft into the turbine hall basement, close to an area in which personnel were working. The station is currently undertaking an investigation in accordance with its arrangements; the ONR site inspector judged that appropriate immediate measures were taken by the station to verify that all work areas were safe and free from potential dropped objects. ONR will undertake follow-up enquiries in February 2017.

4 REGULATORY ACTIVITY

13. ONR may issue formal documents to ensure compliance with regulatory requirements. Under nuclear site licence conditions, ONR issues regulatory documents, which either permit an activity or require some form of action to be taken; these are usually collectively termed 'Licence Instruments' (LIs), but can take other forms. In addition, inspectors may issue Enforcement Notices to secure improvements to safety.
14. During this quarter, ONR issued Licence Instrument agreement number 555 on 1st November 2016, agreeing to the implementation of the boiler tube failure safety case, in accordance with arrangements made by the station under LC 22(1).
15. On 6 January 2017, ONR issued Licence Instrument agreement number 556, agreeing to the implementation of NP/SC 7716 safety case for the graphite core and core restraint, in accordance with arrangements made by the station under LC 22(1).

16. Other regulatory activity is reported below that occurred outside the period of this quarterly report; however, it is considered appropriate to include these items since an update will be provided at the next site stakeholder group meeting on 2 March 2017.

Periodic Review of Safety

17. On 31 January 2017, letter HNB 71273R was issued to the station, detailing the outcome of ONR's assessment of the licensee's Periodic Review of Safety (PSR3) undertaken in accordance with LC 15. The PSR3 submission provides substantiation for a further ten year period of 'operations'; ONR's assessment has taken full cognisance of EDF NGL's publically declared Plant Life Extension (PLEX) aspirations for these stations. ONR's assessment has recognised that future 'operations' are currently defined as a period of electrical generation for Reactors 3 and 4 at Hunterston B, followed by the commencement of reactor de-fuelling activities on the station. In parallel to our assessment of PSR3, ONR has carried out significant assessment of EDF NGL's graphite core safety cases for the Hunterston B reactors, which is directly relevant to our decisions in relation to the PSR.
18. A key outcome of ONR's assessment of PSR3 and the graphite safety cases is our intention to continue to challenge EDF NGL to ensure that it demonstrates that operations of the two reactors remain safe as the graphite cores age. The early onset of Key-Way Root Cracking, which had been predicted by EDF NGL to occur, and which has been confirmed in the Hunterston B reactors, reinforces ONR's expectation that EDF NGL should ensure that continued generation remains underpinned by a detailed knowledge of the condition of the reactor cores. Fundamental to this is the continuing requirement for EDF NGL to undertake regular inspections and analysis of the graphite core to demonstrate that they remain within the limits and conditions defined within the safety case. ONR fully acknowledges that NGL has implemented significant plant improvements at Hunterston B, as is evident by the increased resilience and capacity of the nitrogen plant and the introduction of super articulated control rods, to ensure that the ability to shut the reactors down safely following a seismic event is maintained.
19. Based upon the safety claims and arguments presented in EDF NGL's PSR3 report and the supporting documentation, ONR has concluded that sufficient justification has been provided to support the continued 'operations' of the Hunterston B power stations, as stated above, until the next Periodic Safety Review on or before 31 January 2027.

Interim Inspection of Reactor 3 Graphite Core

20. On 13 January 2017, the licensee shut down Reactor 3 in accordance with a commitment made to ONR in May 2016 to inspect the condition of the graphite core. During the course of this shutdown, the station inspected 26 fuel channels and reported to ONR that it had discovered a further three bricks that exhibit Key-Way Root Cracking. Examination of a crack previously inspected in 2015 revealed two full height axial cracks in the bricks beneath. ONR has examined the full complement of inspection results and has been satisfied that the station may return to service and continue to operate safely for a period of 3 months under its current safety case. To operate for a further period up to January 2018, the licensee will provide a further safety case justification, which will be assessed by ONR.
21. No Enforcement Notices were issued during the period.

5 NEWS FROM ONR

Insight into ONR's work as an independent regulator of the nuclear industry can be found in ONR's [Regulation Matters](#). The online publication (reports on the key themes and developments in each of ONR's regulatory programmes and provides an update about the on-going changes at ONR. For the latest news and updates from ONR visit the [website](#) and sign up for our [ebulletin](#)

CONTACTS

Office for Nuclear Regulation
Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS
website: www.onr.org.uk
email: ONREnquiries@onr.gsi.gov.uk

This document is issued by the Office for Nuclear Regulation (ONR). For further information about ONR, or to report inconsistencies or inaccuracies in this publication please visit <http://www.onr.org.uk/feedback.htm>.

© Office for Nuclear Regulation, 2017

If you wish to reuse this information visit www.onr.org.uk/copyright.htm for details.

Published 02/17

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.