



Office for Nuclear Regulation (ONR) Quarterly Site Report for Heysham Power Stations

Report for period 01 October 2014 - 31 December 2014

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 of the Local Community Liaison Committee and are also available on the ONR website (<http://www.onr.org.uk/lc/>).

Site inspectors from ONR usually attend Heysham 1 and 2 Local Community Liaison Committee meetings and will respond to any questions raised there. Any person wishing to inquire about matters covered by this report should contact ONR.

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1 INSPECTIONS

1.1 Dates of inspection

1. The ONR site inspectors made inspections on the following dates during the quarter:

Heysham 1

- 14, 21, 28-30 October 2014
- 7, 11, 21 November 2014
- 2-4, 9-11 December 2014

Heysham 2

- 09, 21 October 2014
- 04 November 2014
- 04, 9-11 December 2014

2. In addition technical specialists were involved in inspections on the following dates during the quarter:

Heysham 1

- 21 November 2014

Heysham 2

- 22-23 October 2014

3. The ONR Chief Inspector, Chair of the ONR Board and a number of Board members also visited on the following date during this quarter:

Heysham 1

- 10 December 2014

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 (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 site covered the following:

- Documents, records, authorities, and certificates
 - Emergency arrangements
 - Modifications on existing plant
 - Control and supervision of operations
 - Accumulation of radioactive waste
 - Leakage and escape of radioactive material and radioactive waste
 - Organisational capability
6. In addition, the following systems were inspected:
- Fire Detection, Suppression, Barriers, Doors, and Dampers
 - Fuel Decay Store
 - CO₂ Processing and Blowdown
7. 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.

2.1.1 Heysham 1

Boiler Spine Defect

8. As reported in the last quarterly reports, during the statutory outage of Heysham 1 Reactor 1, November 2013, an anomalous result was found during non-destructive testing of a section of one of the multiple boilers. EdF Energy Nuclear Generation Limited (NGL) subsequently justified a period of six month operation of Reactor 1 on the remaining boilers with the anomalous boiler isolated. ONR assessed the safety justification for this mode of operation and was content that Reactor 1 could operate safely for this period. Over a period, NGL developed extensive testing techniques to establish the cause of this anomaly.
9. Reactor 1 was subsequently shutdown on the 10th of June 2014, before the end of the six month period of operation, to allow NGL to deploy the inspection techniques to investigate this anomaly. During deployment of these techniques, they discovered a cracked region in the affected boiler spine around one of the key structural welds.
10. In light of the confirmation of a cracked region on the affected boiler spine on Heysham 1 Reactor 1, known as 1D1, NGL took a positive and conservative decision to shutdown the other reactors at Heysham 1 and Hartlepool to allow investigations on all of the 8 boiler spines in each reactor. The reactors at Heysham 1 and Hartlepool have a similar boiler design and ONR was satisfied that this issue only affects these reactors owing to their specific design.
11. NGL carried out extensive work to support the reactors safe return to service and produced a safety case to justify operation of Reactor 2 at Heysham 1 and the two reactors at Hartlepool at a reduced temperature. ONR formally assessed this safety case and judged that it justified the continued safe operation of these reactors at a reduced temperature. ONR therefore granted agreement for Reactor 2 at Heysham 1, and the two reactors at Hartlepool, to return to service at a reduced temperature on the 21st November 2014. NGL intends to submit a separate safety justification for the return to service of Reactor 1.

Annual Review of Safety

12. The Annual Review of Safety Meeting was held on 9th December and was preceded by a plant tour. The meeting discussed the nuclear safety performance of the station over the previous 12 months as well as a forward look. It was attended by the ONR Nominated Site Inspector for Heysham 1 as well as the Operating Reactors Sub-Programme Delivery Lead.
13. Overall, ONR was satisfied that a comprehensive review of safety had been carried out by the licensee.

2.1.2 Heysham 2

Outage Intentions Meeting

14. The purpose of the meeting was for Heysham 2 Power station to present the scope of work intended to be carried out in the Reactor 7 2015 statutory outage to the ONR. In addition NGL presented an overview of the outage organisation, infrastructure and management arrangements to deliver the safety related activities being undertaken in order to meet the requirements of the relevant sections of Site Licence Conditions 28 and 30.
15. An overview was provided of the outage organisational structure associated with outage management, safety (both nuclear and environmental), quality assurance and acceptance criteria, ONR consultation and capture of return to service items. The licensee provided an overview of the work to be performed during the outage as well as the arrangements in place associated with ensuring nuclear safety including procedural driven maintenance instructions and stringent application of procedural use and adherence (PU&A).
16. ONR was satisfied with the robust and comprehensive approach to the planning and proposed execution of the upcoming outage on Reactor 7.

3 NON-ROUTINE MATTERS

17. 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.
18. There were no such matters or events of significance during the period.

4 REGULATORY ACTIVITY

19. ONR inspectors 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.
 - LI 584 – Agreement to Implement a Safety Case for Return to Service of Heysham 1 Reactor 2 Following the Discovery of a Defect on Heysham 1 Reactor 1 Boiler Spine 1D1 was issued during the period.
 - LI 585 – Agreement to NP/SC 7571 Variable Frequency Converters (VFC) Replacement – Stage Submission 2. This LI enables NGL to replace up to 50% of the VFCs at each of the reactors at Heysham 2 with Variable Speed Drives (VSDs).

20. Reports detailing ONR regulatory decisions can be found on the ONR website at www.onr.org.uk/pars/.

5 NEWS FROM ONR

Insight into ONR's work as an independent regulator of the nuclear industry can be found in ONR's Quarterly News. The online publication (<http://www.onr.org.uk/onr-quarterly-report.htm>) reports on the key themes and developments in each of ONR's regulatory programmes and provides an update about the ongoing changes at ONR. <http://www.onr.org.uk/index.htm>. For the latest news and updates from ONR visit the website and sign up for our ebulletin (<http://www.onr.org.uk/ebulletin/index.htm>).

6 CONTACTS

Office for Nuclear Regulation

Redgrave Court

Merton Road

Bootle

Merseyside

L20 7HS

website: www.onr.org.uk

email: ONREnquiries@onr.gsi.gov.uk

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