



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

Report for period 01 July 2016 – 30 September 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 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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## INSPECTIONS

### Dates of inspection

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

#### Heysham 1

- 1, 6-8 July 2016
- 9-11, 15-18, 25, 31 August 2016
- 1, 2, 29 September 2016

#### Heysham 2

- 11-14 July
- 9-11, 17 -18 August
- 23, 25-30 September

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

#### Heysham 1

- 5-8 July 2016
- 11, 17, 18, 31 August 2016
- 1, 2, 29 September 2016

#### Heysham 2

- 9-11, 17 August
- 6, 12-14, 28-29 September

## ROUTINE MATTERS

### Inspections

3. Inspections are undertaken as part of the process for monitoring compliance with the following:
  - conditions attached by ONR to the nuclear site licence granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
  - Energy Act 2013;
  - 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, the following routine licence condition compliance inspections were undertaken:

Licence condition 10: Training  
Licence condition 11: Emergency arrangements  
Licence condition 12: Duly authorised and other suitably qualified and experienced persons  
Licence condition 21: Commissioning  
Licence condition 22: Modification or experiment on existing plant  
Licence condition 26: Control and supervision of operations Licence condition 36:  
Licence condition 28: Examination, inspection, maintenance and testing  
Licence condition 30: Periodic Shutdown  
Licence condition 32: Accumulation of radioactive waste  
Licence condition 34: Leakage and escape of radioactive material and radioactive waste  
Licence condition 36: Organisational capability

6. In addition to the program of site licence compliance inspections, ONR also inspects operating reactors based on safety related systems. Each site has a safety case, which identifies the important aspects of operation and management required for maintaining safety.
7. For both stations at Heysham, the key systems important to nuclear safety will be inspected against the requirements of the safety case. We plan to inspect all the safety significant systems over a five-year period. ONR considers that this will provide additional assurance that operations on the Heysham site are safe. Each of these system inspections considers the relevant licence conditions below:

Licence condition 10: Training  
Licence condition 23: Operating rules  
Licence condition 24: Operating instructions  
Licence condition 27: Safety mechanisms  
Licence condition 28: Examination, inspection, maintenance and testing  
Licence condition 34: Leakage and escape of radioactive material and radioactive waste

8. During the reporting period, the following safety related systems were inspected:

#### **Heysham 1**

- Main electrical systems
- Internal hazards, fire detection, suppression, barriers, doors and dampers

#### **Heysham 2**

- Radwaste

9. In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. In addition the safety related systems inspected were considered to meet the requirements of the safety case.
10. 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.

## Heysham 1

### Fuel Pin Management

11. Small failures of fuel pin cladding can be expected in normal operation and therefore NGL has in place a safety justification and recovery strategy for such failures. However, during the refuelling of Reactor 2 the number of fuel pin failures was more than would normally be predicted to occur. No radioactivity has been released from the reactor and the fuel pins with cladding failure have now been removed from the reactor in accordance with the approved procedures. NGL has identified that the fuel pin failures were due to carbon deposition which causes the fuel cladding to operate at elevated temperatures. Further examinations are being carried out by NGL to confirm this, and ONR will be apprised of the outcome of this work. As an interim measure to manage the fuel within the reactor, NGL is operating Reactor 2 with a 10% power reduction, thereby decreasing the reactor operating temperatures, to reduce the likelihood of further failures.
12. ONR has considered the safety justification for ongoing operation of Reactor 2 and is satisfied that at this time EDF are taking suitable and sufficient measures to reduce the likelihood of further fuel cladding failures, and to mitigate the failures that have already occurred. ONR will continue to monitor this issue to ensure that continued reactor operation is justified with adequate margins of safety.

## Heysham 2

13. **Reactor 8 Graphite Block Inspections** As part of the station's preparations for the Reactor 8 statutory outage, ONR held a meeting with NGL to establish the scope of the work covering the inspection of the peripheral graphite blocks within the reactor. [As discussed in the previous ONR quarterly report, an observation during the Torness statutory outage of reactor 2 identified a number of cracks within the outer peripheral graphite blocks of the reactor core were observed as part of the routine inspection activities.] The outcome of this inspection work, together with the any other matters arising from the statutory outage will be reported in the next quarterly report.

### **NON ROUTINE MATTERS**

14. 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.

### **REGULATORY ACTIVITY**

15. 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.

16. The following LIs and Enforcement Notices have been issued during the period:

**Table 1**  
**Licence Instruments and Enforcement Notices Issued by ONR during this period**

Date	Type	Ref No	Description
25 <sup>th</sup> July 2016	Acknowledgement	LI 609	Heysham 2 - Data processing and Control System (DPCS) Phased Reinforcement paper of principle

17. Reports detailing ONR regulatory decisions can be found on the ONR website at [www.onr.org.uk/pars/](http://www.onr.org.uk/pars/)

## **NEWS FROM ONR**

### **Regulation Matters magazine**

18. Insight into ONR's work as an independent regulator of the nuclear industry can be found in Regulation Matters. This quarterly online publication (<http://www.onr.org.uk/regulation-matters.htm>) 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, you can also visit the website and sign up for our e-bulletin: <http://www.onr.org.uk/index.htm>.

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