



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

Report for period 1 January to 31 March 2018

## 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 Hunterston B Site Stakeholder Group (SSG) and are also available on the ONR website (<http://www.onr.org.uk/llc/>).

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.

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## 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:
  - 4 January 2018
  - 23 – 25 January 2018
  - 13 – 15 February 2018
  - 6 – 9 March 2018
  - 21 – 22 March 2018
2. ONR's civil nuclear security inspectors, supported where appropriate by specialist inspectors, undertake quarterly inspections at Hunterston B. The quarter 1 planned inspection was undertaken on:
  - 27 – 28 February 2018

## 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).
  - The Fire (Scotland) Act 2005
  - The Nuclear Industries Security Regulations (NISR) 2003
4. The inspections entail monitoring the 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:
  - Licence condition 11 – Emergency arrangements
  - Licence condition 28 – Examination, inspection, maintenance and testing
  - The Nuclear Industries Security Regulations (NISR) 2003
6. In general, ONR judged the arrangements made and implemented by the site in response to safety requirements were adequate. 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. Licence condition 11 – On 23 January, the Site Inspector carried out an inspection of the emergency arrangements facilities on site and monitored implementation of the associated site improvement plan. The Site Inspector was satisfied with the standard

of emergency facilities and with the progress being made to renew some equipment. Accordingly a rating of Green (no formal action) was assigned.

8. Licence condition 28 - Reactor 3 was successfully and safely shut down on 9 March 2018 for its planned inspection of the graphite bricks that make up the core. Specialist Structural Integrity inspectors examined the quality of the graphite inspection data that was being collected and observed the licensee's decision-making processes applied to the core inspection findings. The inspectors confirmed that a high level of expertise and knowledge was being applied and that EDF had addressed some equipment configuration problems that had occurred during a previous outage. It was the view of the inspectors that the visual data was of sufficient quality to allow EDF to make adequate decisions on the nature of the cracking being found. Whilst some recommendations were made on performing additional analyses of the inspection data, a rating of Green (no formal action) was assigned.
9. The Nuclear Industries Security Regulations (NISR) 2003 - On 27 /28 February the ONR Site Security inspector carried out an inspection of the security force at the site which included the Civil Nuclear Constabulary. The inspector was of the view that the maintenance processes, procedures and testing of the detection systems provided assurance that the infrastructure was working adequately. Whilst some areas were identified where the station can make improvements, a rating of Green (no formal action) was assigned.
10. During this quarter, ONR also conducted themed inspections on control and supervision of operations and maintenance and on engineering governance. These inspections examined compliance against licence condition 26 (Control and supervision of operations) and licence condition 17 (Management systems) and against IAEA relevant good practice.
  - Licence condition 26 – On 13 - 15 February the Site Inspector, supported by specialist Quality Assurance and Leadership for Management and Human Factors inspectors conducted an inspection of control and supervision of operations and maintenance. The inspection, which examined plant status control and monitoring, work planning and work execution, found that leadership was strong with good communications, setting of expectations and reinforcing of standards. Inspection of work planning and work execution activities showed safety was being appropriately prioritised and suitably qualified and experienced personnel were adhering to procedures under a good level of supervision. Some opportunities where the station could improve the effectiveness its control and supervision were identified, but overall, inspectors judged that the legal requirements were being met and a rating of Green (no formal action) was assigned.
  - Licence condition 17 – On 6/7 March the Site Inspector, supported by the Corporate Inspector and specialist Internal Hazards inspectors conducted a themed inspection on the management systems applicable to engineering governance. The inspection examined engineering capability, compliance with the company's engineering processes, effectiveness of risk management and work delivery and engineering coordination between station and the corporate centre. The inspection found that sufficient resources were in place to manage equipment assets and prevent failures impacting safety performance and the site was following fleet engineering processes. Overall, inspectors judged that the legal requirements were being met and a rating of Green (no formal action) was assigned. Some minor improvement opportunities were also identified.
11. In addition to our routine compliance inspections and theme based inspections, 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.

- A system based inspection (SBI) on the reactor shutdown sequencing equipment (RSSE) was carried out on the 24 and 25 January. The inspection found that the RSSE was being operated and maintained in accordance with the safety case and that good practice was being applied in some areas which resulted in improved performance of the system. Some improvement opportunities were identified to strengthen the site's strategy for managing the ageing and obsolescence of the RSSE. Overall it was judged that the management of the RSSE met relevant good practice and an intervention rating of Green (no formal action) was assigned.
- A SBI on the Carbon Dioxide Processing and Gas Blowdown Systems was carried out on the 8 and 9 March. The inspection found that appropriate operating rules and instructions were in place and that there was an appropriate examination, inspection and testing regime applied to the systems. The inspectors were satisfied that the systems met the requirements of the safety case and an intervention rating of Green (no formal action) was assigned. A number of minor observations and improvements were identified.

### 3 NON-ROUTINE MATTERS

12. 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.
13. Licence Condition (LC) 7 requires licensees to make and implement adequate arrangements for the notification, recording, investigation and reporting of incidents occurring on the site.
14. During this period, the site inspector reviewed incidents that met the criteria for routine reporting to the ONR under the site's licence condition 7 arrangements. The site inspector sampled the station's follow up reports and corrective actions. From the evidence sampled, the inspector was satisfied that the reported incidents had been adequately investigated and appropriate event recovery actions identified. Matters and events of particular note during the reporting period were:
  - On 5 January, Reactor 3 automatically shut down due to a bulk control rod entering the core. The reactor was safely shutdown and adequate post-trip cooling was established. In normal operation bulk control rods are held out of the core in order to provide a shutdown capability. A Significant Adverse Condition Investigation (SACI) was undertaken, which determined that the control rod was released due to a faulty actuator. The faulty actuator was replaced and the reactor was returned service.
  - On the 23 January, Reactor 3 automatically shut down due to a Gas Circulator Inlet Guide Vane (IGV) fault. The reactor was shut down safely. During operations the IGVs are used to control the level of carbon dioxide coolant that is circulated from the reactor core to the steam generators. The IGVs are automatically adjusted to ensure sufficient heat is removed from the reactor. A SACI was undertaken, which determined that the fault was due to a signalling failure between the IGV and the reactor control system. The signalling fault was repaired and Reactor 3 was returned to service.

#### 4 REGULATORY ACTIVITY

15. 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.
16. Reactor 3 was successfully and safely shutdown on 9 March 2018 for its planned inspection of the graphite bricks that make up the core. The number of cracks found during the inspection has meant that the licensee has to produce a revised 'safety case' for the reactor. Cracking of the graphite bricks has been expected as the reactors age. This form of cracking, referred to as Keyway Root Cracking, was first identified in 2014 in Reactor 4 and in 2015 in Reactor 3. Before formally granting permission to the Licensee to restart Reactor 3, ONR requires that an adequate safety case justifying further operation is made. The licensee has recently presented its safety case to ONR which is currently being assessed.
17. No Enforcement Notices (Improvement or Prohibition notices) were issued during the period.

#### 5 NEWS FROM ONR

18. In January, ONR received the results of its first external stakeholder survey which was undertaken by YouGov on behalf of ONR. A broad range of stakeholders were invited to participate in an online survey, with 351 responses received. In addition to the online survey, a number of in depth interviews were also completed with stakeholders. While overall the results demonstrate ONR is seen as a high performing organisation with good levels of stakeholder confidence, there are areas where improvements can be made and we will be working with our divisions on those in the coming months. Further details about the survey results can be found in our March 2018 newsletter available on ONR's website.
19. In February, ONR held its first webinar following the publication of the 'Guide to enabling regulation in practice.' Chief Nuclear Inspector, Mark Foy and Deputy Chief Inspector, Mike Finnerty, were on hand to answer questions about the guide which has been designed to illustrate working examples of enabling regulation in practice. This is a new channel of communication for ONR and we'll be holding further webinars on different topics over the coming months. If you would like to join future webinars then please get in touch with the ONR Communications team via [contact@onr.gov.uk](mailto:contact@onr.gov.uk)
20. In March, ONR held the first of two meetings this year with representatives from across the NGO community. Held in Birmingham, the meeting was attended by 15 NGO representatives from eleven different organisations. Topics discussed included: Domestic Safeguards pending the withdrawal of the UK from Euratom; Emergency Planning Arrangements; and the ONR Stakeholder Survey results. The next meeting is scheduled to take place in October 2018. We are keen to increase the number of people engaging with ONR on nuclear safety and security issues and would like to invite members of SSGs, and LCCs to join our engagement programme. For more details please get in touch via [contact@onr.gov.uk](mailto:contact@onr.gov.uk)
21. For the latest news and updates from ONR visit the website and sign up for our e-bulletin (<http://www.onr.org.uk/ebulletin/index.htm>).

## CONTACTS

Office for Nuclear Regulation  
Redgrave Court  
Merton Road  
Bootle  
Merseyside  
L20 7HS  
website: [www.onr.org.uk](http://www.onr.org.uk)  
email: [contact@onr.gov.uk](mailto:contact@onr.gov.uk)

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