



# Office for Nuclear Regulation (ONR) Quarterly Site Report for Wylfa Power Station

Report for period 1 January – 31 March 2015

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

Site inspectors from ONR usually attend Wylfa Site Stakeholder Group 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

The ONR site inspector made inspections on the following dates during the quarter:

19, 20, 21, 22, 23 January 2015

9, 10, 11, 12, 13 February 2015

16, 17, 18 February 2015

2, 3, 4, 5 March 2015

ONR Leadership and Management for Safety specialist inspectors attended a transition to defueling – regulatory interface meeting on 29 January 2015.

The ONR Site Inspector attended the Wylfa and Trawsfynydd Emergency Planning Consultative Committee on 17 March 2015 and was supported by the ONR Emergency Preparedness and Response Specialist Inspector.

The ONR Site Inspector and Superintending Inspector for Magnox Sites attended the Wylfa Annual Review of Safety on 26 and 27 March 2015.

The ONR Site Inspector attended the annual Wylfa Graphite Core Safety Case meeting with relevant ONR specialist inspectors on 31 March 2015.

## 2 ROUTINE MATTERS

### 2.1 Inspections

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).

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.

In this period, routine inspections covered the following:

Examination, maintenance, inspection and testing;  
Management of operations including control and supervision;  
Staff training, qualifications and experience;  
Modifications to plant, equipment and safety cases;  
Emergency preparedness;  
Incidents on the site;  
Radioactive waste management;  
Periodic safety review.

In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. 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.

#### Review of Safety Meeting

ONR held a review of safety meeting with station during the period. The meeting provided an opportunity for them to present a review of safety-related activity at Wylfa during the past period, and to look forward to safety improvements proposed for the coming period. Overall, station provided a comprehensive report on their progress with safety-related activities, and made commitments to improve safety where possible during the next operating period. As a contribution to the review meeting process, ONR conducted an inspection of facilities on the site and held a meeting with the site safety representatives. ONR will review progress with the commitments made during the meeting, at the next review of safety at Wylfa power station.

#### Safety System Inspections

ONR includes inspections of the systems that contribute to the safety of operating reactors in addition to compliance inspections based on the conditions attached to the nuclear site licence. The nuclear site licence requires that all licensed sites must have a safety case in respect of any operation which may affect safety. For the Magnox reactor that remains in operation at Wylfa power station, 30 systems have been identified to provide the basis for inspecting safety systems to ensure they meet the claims made on them by the safety case. The intention is to inspect systematically over a five year cycle all of the safety-related systems identified for the site. ONR considers that this approach will provide the necessary level of assurance that the requirements of the safety case are met and the site is being operated safely.

This quarter, the safety systems inspected were: the fuel handling systems and fire protection systems. On the basis of the inspections, the systems were deemed to be operated and maintained in accordance with the requirements of the station safety case. Where areas for improvement were identified, station undertook to take appropriate action to address them. ONR will monitor progress to complete the agreed work.

Further details of ONR's system inspections at Wylfa power station and other nuclear licensed sites can be found at: [www.onr.org.uk/intervention-records/index.htm](http://www.onr.org.uk/intervention-records/index.htm)

#### Wylfa Graphite Core Safety Case Meeting

The 2004 Periodic Safety Review of Wylfa resulted in ONR issuing a decision letter stating the requirement for Magnox Ltd to undertake an annual review of the graphite core safety case until an adequate safety case supporting continued safe operation to the end of generation has been produced. Since imposition of that requirement, Magnox Ltd has produced an annual review of the graphite core safety case and this meeting was to discuss the latest addendum.

The review undertaken by Magnox Ltd confirms that there are no unexpected issues arising during the past year and that the Reactor 1 core remains capable of safely delivering its design function for the remaining period of generation.

The planned permanent shutdown of Reactor 1 in December 2015 means that the requirement on Magnox Ltd to perform an annual review of the graphite core safety case will cease. Furthermore, Magnox Ltd proposed that no annual review will be presented at the end of 2015 and any anomalous results from analysis, monitoring or inspection will be addressed in an appropriate safety submission. ONR is content with this position and agrees that no further reviews will be required.

## 2.2 Other work

### Site Safety Representatives

The Site Inspector held a periodic meeting with safety representatives, to support their function of representing employees and receiving information on matters affecting their health, safety and welfare at work.

### Transition to Defueling – Regulatory Interface Meeting

This meeting was planned by Wylfa in order to provide regulators from ONR and the Environment Agency/Natural Resources Wales with an update on their Defueling Transition Programme including organisational change. The meeting provided updates on current reviews of proposed defueling structure following establishing the new Magnox Ltd executive. As yet Magnox Ltd has not confirmed a final structure for Wylfa defueling operations and ONR expects this will be confirmed during the following quarter. The meeting was judged to be a valuable engagement and provided an opportunity to ensure common understanding of regulatory expectations during transition. Engagements with the site on this topic will continue to be held on a quarterly basis.

### Wylfa and Trawsfydd Emergency Planning Consultative Committee

The ONR Site Inspector attended a meeting of the station emergency planning consultative committee. The meeting provided an opportunity for ONR to observe the business of the meeting, and answer questions relating to regulation of emergency arrangements at Wylfa power station. The ONR Specialist Inspector for Emergency Preparedness and Response provided a presentation on the current regulatory process for determining emergency planning areas.

### Relicensing of the Harwell and Winfrith Sites to Magnox Limited

On 1 September 2014, the ownership of both Magnox Ltd and Research Sites Restoration Limited (RSRL) was transferred by the Nuclear Decommissioning Authority to the Cavendish Fluor Partnership Limited, the new Parent Body Organisation (PBO). At this time ten Magnox reactor sites were licensed to Magnox Ltd and the Harwell and Winfrith sites, in Oxfordshire and Dorset respectively, were licensed to RSRL. As part of the new PBO's organisational change strategy, on 28 November 2014 Magnox Ltd and RSRL applied to ONR to relicense the Harwell and Winfrith sites to Magnox Ltd.

ONR conducted a targeted and proportional assessment of these applications in accordance with its publication 'Licensing Nuclear Installations' and on 30 March 2015 the Chief Nuclear Inspector, Andy Hall, granted Magnox Ltd new nuclear site licences for the Harwell and Winfrith sites. These new licences were to come into force on 1 April 2015, so from that date, the Harwell and Winfrith sites are licensed to Magnox Ltd along with the existing ten Magnox reactor sites. ONR's Project Assessment Report relating to this relicensing will be published on the ONR [website](#).

With 12 sites now under the management of Magnox Ltd as a single licensee, the PBO will be able, subject to a further organisational change, to carry out decommissioning and hazard-reduction activities across the decommissioning sites using a programmatic approach, in which common decommissioning methods will be deployed at different sites.

Magnox Ltd plans further organisational changes and the introduction of a unified management system across the 12 sites, which will result in common arrangements for compliance with ONR's licence conditions. These organisational changes and changes to the licensee's licence condition compliance arrangements will be subject to appropriate assessment and oversight by ONR in future months.

## 3 NON-ROUTINE MATTERS

Licencees 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.

Matters and events of particular note during the period were:

#### Reactor 1 – Refuelling Difficulties

Whilst attempting to discharge fuel from Reactor 1, grab support could not be obtained. The grab was inspected with no fault evident, and BCD lock-on initiated to monitor channel counts and temperatures, with no abnormalities evident, so two further channels were refuelled without grab engagement problems. An Operational Decision Meeting was called by the Site Director on Sunday 8th March to discuss the possibility of either a bowed element or debris in the channel. The decision was taken to carry out a controlled shutdown of Reactor 1 to allow camera inspections to be carried out using the TV Hoist. The matter was discussed between the ONR Site Inspector and the Station safety case manager. ONR confirmed that there was no risk to nuclear safety and Magnox Ltd were acting in a conservative and practical manner. ONR Site Inspector was routinely updated by Magnox Ltd on this matter during investigation, refuelling and subsequent return to service.

#### Reactor 1 – Gas Circulator Diffuser Support Pad Incident

As a result of actions required to investigate elevated Pressure Vessel Cooling Water (PVCW) temperatures on R1 Gas Circ's Diffuser Support Pads, it was found that the majority of the Diffuser Support Pad cut-off valves (two per circulator) did not adequately seal when closed. An Operational Decision Meeting was convened and the decision taken to produce "justification for continued operation" (JCO) and appropriately categorised safety case thereafter. The ONR Site Inspector discussed this matter with the Wylfa Plant Manager. ONR decided to monitor Magnox Ltd's investigation and subsequent improvements identified. A review of the INES rating by the UK INES rating officer concluded that the event should be categorised INES 1 rather than INES 0 (International Nuclear and Radiological Nuclear Event Scale (INES) is a tool for promptly communicating to the public in consistent terms the safety significance of reported nuclear and radiological incidents and accidents. On this scale, INES 0 has no nuclear safety significance and INES 1 is considered as an anomaly.). Site has since confirmed it is in agreement with this decision and a follow-up inspection by ONR, during April, of Magnox Ltd's investigation and subsequent response from a human factors perspective will be undertaken to confirm that risks of reoccurrence of similar incidents are minimised.

#### Dry Store Cell 1 Interlock Failure

During routine maintenance of Dry Store Cell (DSC) 1, the 15" plug Plant Item Maintenance Instruction (PIMI) requires the testing of the 5" plug and store gate valve interlocks. While carrying out these checks it was noted that it was possible to open the store gate valve with the 5" plug removed. This is a failure of the interlock, the store gate valve should only be able to open if the 5" is inserted or the interlock override plunger is depressed. On investigation it was found that the plug inserted plunger had seized preventing the store gate valve from locking in the shut position. DSC1 15" closure interlock was rectified and tested. PIMI amendments are in progress. ONR Site Inspector discussed the incident with Wylfa Engineering Manager and confirmed that appropriate response was taken by site and that there was no impact on nuclear safety.

#### Error in Fuel Record System

A software error in the Wylfa Fuel Records System has led to the irradiations of over 4000 fuel elements being under-calculated by one month's burn-up. The majority of this fuel has already been sent to Sellafield (3548 elements). There is no error in the accounting of the physical locations of the fuel elements and no impact on nuclear safety. A telephone conference took place on 16 January involving ONR Safeguards, Wylfa and the Magnox safeguards corporate advisor at which both the scale of the problem and the potential significant resource requirement to correct the affected records were highlighted. ONR has provided Sellafield, who may be affected by the incorrect burn-up calculations, with a summary of the issue and

Euratom with regular updates and a copy of the interim investigation report (the final report is expected in April 2015). The on-going investigation has shown the error was introduced during an upgrade in 2005. ONR will provide further updates to the E4 and E5 Euratom Directorates and Sellafield. Wylfa has submitted the Interim Event Investigation Report. Copies have been provided to ONR and Euratom. Wylfa will continue to update ONR as the investigation continues. ONR Safeguards' view is that any impact at Wylfa should be minimised, recognising that not carrying out the corrections may be the most suitable option; there should be no onward impact for Sellafield. A change in the operating procedures has been introduced to ensure that the FRS is correctly updated with all burn up figures, as any fix to the software error will take at least several months.

#### **4 REGULATORY ACTIVITY**

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.

- No LIs or Enforcement Notices were issued during the period.

#### **5 NEWS FROM ONR**

##### **5.1 Relicensing of the Harwell and Winfrith Sites to Magnox Ltd**

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##### **5.2 ONR Annual Plan**

ONR has published its [Annual Plan for 2015/16](#), setting out its priorities, as well as providing details of the year's planned activities and key targets.

##### **5.3 Annual Report and Accounts**

ONR is in the process of producing its first Annual Report and Accounts (ARA) as a public corporation. It will be laid in Parliament in June 2015. The report presents an overview of our

first year, including achievements, financial management and the annual Chief Nuclear Inspector's Statement.

Insight into ONR's work as an independent regulator of the nuclear industry can be found on the ONR website news centre (<http://news.onr.org.uk>) and 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 ONR. 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>).

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