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

Report for period 1 April - 30 June 2021

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 (http://www.onr.org.uk/feedback.htm).

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1 INSPECTIONS

1.1 Dates of inspection

1. During this reporting period the ONR nominated site inspector, supported by specialist inspectors, carried out inspections on site, on the following dates:

- 27-29 April 2021
- 18-20 May 2021
- 29 June – 1 July 2021

2. ONR's civil nuclear security inspector usually undertakes quarterly inspections at Hunterston B:

- The site security inspector carried out inspections on the 18 and 19 May 2021.

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 2017 (IRR17), the Management of Health and Safety at Work Regulations 1999 (MHSWR99), the Radiation Emergency Preparedness and Public Information Regulations 2019 (REPPIR) and The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG);
- 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 licence conditions (LCs) 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 and meetings at Hunterston B covered the following inspections:

- NISR / LC11 – Security / Safety demonstration exercise;
- LC23 / LC24 – Operating rules and operating instructions;
- LC 35 - Decommissioning.

6. NISR / LC11 – On the 18 and 19 May, a joint security and safety exercise was held that demonstrated revised arrangements for responding to security events that have potential to result in safety consequences at the site. The exercise confirmed that the station and the Civil Nuclear Constabulary have reviewed the command and control interactions between the respective organisations to ensure that actions, which protect the public, the people on site, and ensure the nuclear safety of the reactor plant whilst maintaining security and preserve incident scenes, can be implemented efficiently. ONR

considered the revised emergency response arrangements were effective and an inspection rating of GREEN (no formal action) was assigned.

7. LC 23 / LC24 – On 29 and 30 June, specialist human factors inspectors carried out an inspection of the operating rules and instructions intended to be used during the planned defuelling of the reactors. The inspection found that NGL's extant refuelling arrangements form a sound foundation on which the defuelling procedures can be developed and adequate progress continues to be made. A small number of shortfalls were observed in the documents and equipment inspected, none of which in themselves are considered sufficiently significant to challenge safety during defuelling. A suitably detailed programme of work is required to ensure the station maintain oversight of progress and ensure that adequate time and resource is secured to complete this work. Overall, the station preparations for defuelling were judged to be broadly in-line with regulatory expectations and an inspection rating of GREEN (no formal action) was assigned.

8. LC 35 – On 29 June to 1 July the nominated site inspector and project inspector carried out an inspection of decommissioning plans. The inspection examined the development of work programmes, to be carried out during the defuelling phase, that will enable the station to commence decommissioning once it has been declared fuel free. The inspection found that the station's focus to date has been on the dual mission of safe operations and preparations for defuelling. This will change, at end of generation, to safe defuelling and preparations for deconstruction. The station has initiated development of an executable plan which will become available in the coming months. ONR will engage with the station to gain further confidence the plan is complete; initially focussing on strategic assumptions, the key decision calendar and the enablers for the key decisions. There were no findings that could significantly undermine nuclear safety and therefore a rating of GREEN, (no formal action), was assigned to the inspection.

9. In addition to our routine compliance 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 fifteen key systems are 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 (three per year). ONR believes that this will provide more robust assurance of the site's safe operation and how the safety case is being implemented.

   - There were no system-based inspections during the reporting period.

10. ONR also carries out themed inspections which seek to evaluate the effectiveness and consistency of implementation of the licensee's processes and procedures. These inspections are carried out at the site and across the EDF fleet and usually require a team of four specialist ONR inspectors.

   - There were no themed inspections during the reporting period.

3 NON-ROUTINE MATTERS

11. 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.

12. 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. During this period, the site inspector reviewed incidents that met the criteria for routine reporting to ONR. The site and specialist inspectors also

sampled the station's follow up reports and corrective actions. From the evidence sampled, the inspector was satisfied that the events reported during the period, had been adequately investigated and appropriate event recovery actions identified. Matters and events that met the ONR formal reporting criteria during the period included:

- For the following fire events there was no release of radioactive material and no members of the public or site workers were placed at risk. ONR intends to follow up these events to ensure that the appropriate learning is identified and implemented:

  - On 10 May 2021, a fire alarm was initiated and visible flames observed from one of the five available Emergency Boiler Feed Pumps, (EBFPs). The EBFP was providing cooling to Reactor 4, which was shut down for its graphite inspection outage. The pump protection tripped which extinguished the flames and one of the alternate EBFPs was used to ensure appropriate cooling to Reactor 4 was maintained. No other plant was affected, Scottish Fire and Rescue Service confirmed the fire had been extinguished and site emergency response actions were carried out appropriately. The station is carrying out an investigation into the causes of the event.
  - On 18 May 2021, during a test run, flames were observed to be coming from the Reactor 3 dump condenser extract pump (DCEP). The DCEP is used during a reactor trip to manage the sudden excess steam from the turbine when it is no longer required to generate electricity after a reactor trip. The DECP protection systems tripped the pump and immediately extinguished the flames. Reactor 3 was operating at power and continued to operate throughout the event as alternative DCEP were available in the event that Reactor 3 tripped. No other plant was affected and Scottish Fire and Rescue Service attended site and confirmed the fire had been extinguished. The station is carrying out an investigation into the causes of this event.
  - On the 12 June 2021, a fire was detected in an administration building located outside the main reactor plant area. It was established that pressure washing of the exterior the building had resulted in water ingress to the building fuse board causing a short circuit. The fire was quickly extinguished by the site emergency response organisation and Scottish Fire and Rescue Service attended site. No damage occurred to the building and an investigation is being carried out to identify the learning from this event.

- The following configuration control events have been reported to ONR and resulted in either protection systems becoming unavailable or to activate unintentionally. At all times sufficient defence in depth was maintained, the reactors continued to be managed safely, no release of radioactive material occurred and there was no risk to members of the public or site workers. ONR intends to follow up on these events:

  - On 30 March 2021, maintenance was being carried out on the Mulsifyre fire protection system. On completion of the work, the plant was declared available for service, but it was established that a valve had not been de-isolated correctly resulting in the fire protection being unavailable. This contravened an operating rule for a short period. Both reactors were shut down for their graphite inspection outages (GIO) and the risk was therefore low. An investigation is being carried out to determine the causes of this event.

- On 12 April 2021, Reactor 3 was shutdown for its GIO. When a reactor is shutdown the regulating control rods, which control the reactor output when at power, are normally held out of the core. During operations to prepare Reactor 3 for refuelling, the reactor was not maintained at the correct pressure. This condition contravened an operating rule and in response the reactor protection system inserted the regulating control rods into the core. At all times Reactor 3 was maintained safely shut down, by the bulk controls which were fully inserted into the core, and it was confirmed that the failure to maintain the specified operating pressure had activated the reactor protection system.
- On 6 May 2021, during the Reactor 4 GIO, maintenance was being carried out on the Reactor Shutdown Sequencing Equipment (RSSE). The maintenance job instruction had referenced an incorrect operating instruction, which resulted in the RSSE activating spuriously. At all times during this event Reactor 4 was maintained safely shutdown and appropriate cooling continued to be applied. An investigation had been initiated, which will be followed up by ONR.

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 and letters to secure improvements to safety.

- No Enforcement Notices (Improvement or Prohibition notices) were issued during the period.

- No Enforcement Letters were issued during the period.

14. Reactor 3 was shut down as planned on 5 March 2021 for its graphite inspection outage (GIO). The results of the GIO were found to be within expectations. ONR provided its Agreement, on 13 April 2021, for Reactor 3 to return to service for its final period of operation, see ONR gives permission for Hunterston B Reactors to return to service - Office for Nuclear Regulation news. Reactor 3 is scheduled to operate until November 2021, when it will be shut down for the final time. It will then enter a pre-defuelling outage before defuelling commences in early 2022.

15. Reactor 4 was shut down as planned on 26 March 2021 for its GIO after a period of 6 months operation. The results of the Reactor 4 GIO were also found to be within expectations and the reactor returned to power on 5 June for its final period of operation. Reactor 4 is scheduled to operate for around 6 months and will be shut down before 7 January 2022 at which point it will also commence its pre-defuelling outage.

5 NEWS FROM ONR

16. Below are summaries of key activities over the last three months. Further detail is available on our website.

Covid-19 (Coronavirus) (ONR position)

17. We are continuing to obtain assurance that nuclear site licensees and other dutyholders are adequately resourced to continue to safely and securely carry out their

activities. We remain satisfied with industry's response at this time and there has been no significant change to dutyholders' safety and security resilience.

18. All licensed sites are required to determine minimum staffing levels necessary to ensure safe and secure operations and contingency arrangements in the event that these levels are not met. This condition is specifically designed to ensure that industry can adequately manage and control activities that could impact on nuclear safety and security under all foreseeable circumstances, including pandemics.

19. Although ONR staff continue to work primarily at home, (carrying out as much of our work as possible via videoconference, phone and email), we are carefully and progressively increasing our site footprint. We continue to assess our on-site presence in line with government guidelines and our business needs, ensuring we have a balanced portfolio of on-site inspections and interventions, that are important to support effective regulation across our purposes.

20. Our latest position can be found on our website.

Enforcement Action

21. In April, we announced that EDF complied with a Direction we served on 14 December 2020, under the Pressure Systems Safety Regulations (2000). This followed an inspection, at which found a number of pressure system components at Heysham 1 Power Station were overdue their scheduled examination.

22. In May, we agreed to extend an improvement notice served on EDF in September 2020, recognising the progress made so far. The notice was served after some of the equipment used to measure reactor power at Heysham 2 was incorrectly configured. We judged that Heysham 2 is able to operate safely, and that additional time to demonstrate the required improvements will not pose a risk to safety. EDF must now comply with the improvement notice by 31 July 2021.

23. In June, we announced that Rolls-Royce Submarines Ltd (RRSL) had complied with an improvement notice served on 29 May 2020. The notice was served after RRSL operators brought 21 units of fissile material into the facility - which exceeding the limit defined within the safety case and set out in the Criticality Control Certificate for the facility.

Stakeholder Engagement

24. In April, we published an article introducing our newest board member, Jean Llewellyn, who joined us in October 2020, as security lead. Jean brings with her a wealth of experience, including serving as a non-executive director on the board of the World Institute for Nuclear Security since 2018 - which has given her a good understating of the global security challenges facing the nuclear industry.

25. In May, we issued our e-bulletin 'ONR News' to subscribers. This issue included farewell reflections from our outgoing chief executive, a leadership update, further information on our COVID -19 response, and the results of our latest stakeholder survey. You can sign up for our e-bulletin here

26. On 1 June, we announced the full implementation of our new leadership structure. Mark Foy is now our combined Chief Executive and Chief Nuclear Inspector. He is supported by Sarah High as Deputy Chief Executive, and Donald Urquhart as Executive Director of Operations.

27. In June, we published our new Corporate Plan for 2021/22, which sets out our key priorities to protect the public by securing safe nuclear operations.

28. In June, our State System of Accounting for and Control of Nuclear Material (SSAC) project - which saw ONR become the UK's national nuclear safeguards regulator from 31 December 2020, was shortlisted for a national award in the Project Management Institute's UK National Project Awards in the 'Project of the Year (Public Sector)' category.

29. Nuclear safeguards are measures to verify that countries comply with international obligations not to use nuclear materials from civil nuclear programmes for non-peaceful purposes.

6 CONTACTS

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