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

Report for period 1 July to 30 September 2020

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. During this reporting period, Covid-19 social distancing restrictions continued to prevent ONR carrying out some inspections at the station. Remote inspections were carried out by ONR specialist inspectors whilst the ONR nominated site inspector carried out inspections on site, on the following dates:

- 20-22 July 2020
- 8-10 September 2020

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

- The scheduled security inspection in the period was postponed due to the Covid-19 restrictions.

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 of:

- LC 30 – Periodic shutdown;
- Fire safety;
- LC 28 – Examination, inspection, maintenance and testing (EIMT);
- LC 9 – Instructions to persons on the site.

6. LC 30 – On the 20-22 July, the nominated site inspector carried out an inspection, on-site, as part of the ONR decision making process to determine whether Reactor 3 should be granted Consent to return to power. The inspection confirmed that Reactor 3 was being thoroughly checked and re-commissioned to place it in the appropriate state

for return to service. The inspection of the gas circulator and turbine halls confirmed that the plant had been maintained to a high standard. Learning from the recent return to service of Reactor 4, (August – December 2019), had been re-applied to Reactor 3 and the Operations 'Match fit' improvement process had been extended to all departments and quality assurance audits were being carried out to independently confirm that re-commissioning quality plans are being adhered to. The inspection also confirmed that all operations staff were thoroughly trained, and the Central Control Room team demonstrated an impressive response to a challenging exercise scenario. From the sample of the governance and oversight applied to the return to service of Reactor 3, it was confirmed that the station was robustly applying its re-commissioning processes and no matters affecting nuclear safety were identified. The inspection was rated Green, no formal action, and the site inspector supported the ONR decision to return Reactor 3 to service, (see Section 4 Regulatory Activity below).

7. Fire safety – On the 3 September, a specialist fire safety inspector carried out a remote inspection against the requirements of the Fire (Scotland) Act. The inspection focussed on the work by station to ensure fire safety management standards were being maintained during the period of Covid-19 precautions. It was confirmed that practical fire extinguisher training continued to programme, and extra training provided to ensure the fire safety coordinator was being adequately supported. Several areas of industry good practice were noted including the reprioritisation of the routine fire risk assessments to ensure all high-risk facilities were reviewed and compliant with the Act. The inspection was rated as Green and no matters were identified as requiring immediate regulatory attention.

8. LC 28 - On the 8-10 September, the nominated site inspector carried out an inspection, on-site, as part of the decision making process to determine whether ONR should Agree to the return to service of Reactor 4. The inspection confirmed that there is a clear understanding of the work scope to re-commission Reactor 4 and that a robust process was being used to track and record the progress. The plant inspection examined the Reactor 4 Gas Circulator Hall and the Unit 8 Turbine hall and confirmed the systems had been maintained to high standard, all plant preservation modifications had been removed and only a very few minor defect cards were present. The station was confirmed to be making adequate progress towards re-commissioning and return to service of Reactor 4. No issues were identified that could impact nuclear safety. The inspection was rated Green, no formal action, and the site inspector supported the ONR decision to return Reactor 4 to service, (see Section 4 Regulatory Activity below).

9. LC 9 - On the 8-10 September, the nominated site inspector carried out an inspection, on-site, against LC9 - Instructions to persons on the site. The inspection found that the station has a robust process for ensuring staff and contractors receive adequate instruction on the risks and hazards associated with plant on site. The inspection was rated Green, no formal action.

10. 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 themed inspections during the reporting period.

11. 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

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. 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:

- Modification to Charge Machine – As part of the preparations for defuelling at the end of generation, a modification was made to the charge machine to permit Fuel Plug Units (FPUs) to be returned to the reactor and used to seal a fuel channel once the fuel has been removed. The FPUs are transported at height within the charge machine and the purpose of the modification was to protect against a FPU dropping on to the top of the reactor and damaging the reactor containment. On 18 July 2020, a FPU, without fuel attached, was being lowered into the Active Maintenance Facility (AMF) when the protection system activated and prevented the FPU being lowered into the AMF. The FPU was recovered to a safe set down position and the event investigated. It was confirmed that whilst the protection system worked correctly at Reactors 3 & 4, an unintended consequence of the modification was that protection system remained active at the all fuel route facilities including the AMF. Operations were suspended whilst the modification was disabled, and the event investigated by EDF. ONR will review the findings of the investigation once it becomes available. There was no risk to workers or members of the public from this event.

- Maintenance of Start and Standby Boiler Feed Pump – On 7 September 2020 Reactor 3 was being operated on the start and standby boiler feed pumps following its return to service. Axial wear alarms were registered on the pumps which provide cooling to the reactor. Investigations by a maintenance team managed to clear the alarm on the first pump but was unsuccessful in clearing the alarm on the second pump. The authorised work instruction clearly set out the requirements for the task and how to set the axial wear alarm correctly. However, when this was unsuccessful the maintenance team took the decision to power cycle the control cubicle to reset the equipment. This action was outside the scope of the authorised task instruction and the maintenance team did not consult the Central Control Room (CCR) or consider the impact of the action. The outcome was activation of the pump reverse rotation protection which resulted in a loss of forward feed and a load transient. The CCR managed the load transient in accordance with its standard procedures and successfully prevented a reactor trip. No worker or members of the public were put at risk from this event. The event has been thoroughly investigated and the learning has identified actions which are being addressed under a human

performance and procedural use and adherence improvement programme. ONR is satisfied with the action being taken by the station.

4 REGULATORY ACTIVITY

14. 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.

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

16. No Enforcement letters were issued during the period.

17. On the 27 August 2020, ONR granted Consent for Reactor 3 at Hunterston B to return to service. The consent under LC30 was for a period of approximately 6-months operation, (to a total core irradiation of 16.425 Terawatt days). A core inspection will be carried out and a revised safety case will have to be presented to and agreed by ONR before a further and final 6 months operating period may be agreed. The decision to permission the restart of Reactor 3 was given after extensive and detailed assessment of the safety case by specialist ONR inspectors. The project and assessment reports outlining the basis of ONR's decision have been published at Reactor 3, Hunterston B return to service.

18. On 24 September 2020, ONR gave its Agreement for Reactor 4 at Hunterston B to return to service. The agreement under LC28 was for a period of approximately 6-months operation, (to a total core irradiation of 16.25 Terawatt days). As for Reactor 3, a core inspection will be carried out and a revised Reactor 4 safety case will be presented to ONR before a further and final 6 months operating period may be agreed. The basis of the ONR decision has been published at Reactor 4, Hunterston B return to service.

5 NEWS FROM ONR

Covid-19 (Coronavirus)

19. ONR is continuing to obtain assurance that nuclear site licensees and other dutyholders are adequately resourced to continue to safely and securely carry out their activities.

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

21. As COVID-19 restrictions change, our focus is on the preparedness for the weeks and months ahead and maintaining safe and secure operations in the face of any further escalation in COVID-19 transmission.

22. ONR staff continue to work at home, primarily. We are increasing our on-site regulatory work in accordance with public health advice. We'll also continue to inspect, assess and permission remotely where necessary to protect staff, workers on site, and the public around sites.

Enforcement Action

23. In July we publicised the serving of an Improvement Notice on Rolls-Royce Submarines Ltd (RRSL) for procedural safety breaches at its Derby site. The notice was served after shortfalls were identified against the safety case requirements at a nuclear fuel production facility on the site.

24. In September we announced that an Improvement Notice had been served on EDF Energy Nuclear Generation Ltd (EDF NGL) for shortfalls in safety procedures at its Heysham 2 Power Station in Lancashire. The notice was served after some of the equipment which is used to measure reactor power was incorrectly configured during the reactor's restart process following a planned outage in April 2020.

25. In September we announced that an Improvement Notice had also been served on Devonport Royal Dockyard Ltd for shortfalls in maintenance procedures at its Plymouth site. The notice was served after Devonport Royal Dockyard failed to carry out scheduled maintenance tests on an effluent extraction system which is used to support maintenance and repair activities within the licensed site.

26. In September we publicised our intention to prosecute AWE plc under Section 3 of the Health and Safety at Work etc. Act (1974). The charge relates to an incident on 20 June, 2019, at the AWE Aldermaston site which resulted in a contractor narrowly avoiding injury when a flash over of electricity occurred from a 415V electrical source. The incident was a conventional health and safety matter and took place in a 'non-nuclear' building, so there was no radiological risk to workers or the public.

Regulatory updates

27. In July the Government published its response to the International Atomic Energy Agency's final report on the Integrated Regulatory Review Service (IRRS) mission to the UK. The IRRS mission took place between 14 – 25 October 2019 was hosted by ONR, and saw a team of 18 independent experts from across the globe scrutinising the regulation of nuclear and radiological safety.

Corporate updates

28. In July we published our new 2020-25 Strategy, which sets out our direction and priorities for the next five years. It builds on our strengths and continues to focus on protecting society, and addressing the changing demands we will face as the UK's nuclear regulator.

29. In late September we published our Annual Report and Accounts highlighting our performance and key achievements for 2019/20.

30. The report notes that we continued to deliver our mission of protecting society by securing safe nuclear operations and that the majority of dutyholders have continued to meet the high standards of safety and security required. Where dutyholders have fallen short of such standards, we are satisfied that their facilities remain safe and that our regulatory focus has had a positive impact on their performance.

31. During the year, we completed more than 800 compliance inspections across 36 licensed sites during 2019/20, granting permission for 30 nuclear-related activities, serving three improvement notices and instigating one prosecution.

32. ONR Chair Mark McAllister said: "I am pleased to report that we have again delivered our mission and achieved our 2020 vision. As we look ahead, I have every confidence in our senior leadership team to see through the strategic improvement projects already underway that will enhance the organisation's information and knowledge management system, and successfully deliver the aspirations of our new strategy."

33. In September we announced that Jean Llewellyn OBE had been appointed to the ONR Board as the new Security Non-Executive member. Jean will take up her appointment on 1 October 2020 for a three year term and will Chair ONR's Security Committee.

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