



HUNTERSTON A

SITE STAKEHOLDER GROUP REPORT
SITE CLOSURE DIRECTOR

SEPTEMBER 2017

HUNTERSTON A SITE CLOSURE DIRECTOR'S REPORT TO THE SITE STAKEHOLDER GROUP SEPTEMBER 2017

Hunterston A continues to make good progress on our programme of work to Care and Maintenance. We continue to be adequately funded by the NDA and remain committed to addressing the nuclear liabilities at Hunterston A in a safe, secure manner with care for the environment.

1 SAFETY OVERVIEW

1.1 Safety Review Performance

Safety Performance on site remains good and it has now been 40 months since the last Lost Time Accident (LTA) on site. The Site Total Recordable Incident Rate (TRIR) is 0.32 and the Day Away Case Rate (DACR) remains at zero. However, during this reporting period there has been one first aid case on site, when dust entered an individual's eye.

The Company-led "Target Zero" campaign is gathering momentum. The topics for the last three months have been Environment (June), Electrical Safety (July) and Radiological Safety (August). These topics are focus points for each month and are designed to stimulate discussions, questions, promote awareness and hopefully prevent or reduce unwanted events. The Target Zero questions have been refreshed and questions relating to each topic are now 'open' questions designed to encourage discussions relevant to the topic with the desired output being Zero Accidents, Zero Incidents and Zero Harm.

The site maintains an excellent reporting culture and the number of Learning Capture Forms (LCF's) received on site is constantly over 100 each month. The LCF's are a key part in our Operational Experience Feedback (OEF) process. Often there are LCF's submitted that have identified good practice and excellent workmanship that may have prevented an unwanted event.

During August Magnox are introducing a database called "Q-Pulse" which will be used to track and manage LCF's and actions that are triggered by LCFs. This new database will improve event reporting, trending and management of actions, replacing the existing system and goes live on site week commencing 28 August.

Magnox and contractor Safety Representatives are providing support to the various proactive processes on site and are frequently engaged in housekeeping tours on site; engaging with our Regulators and are key part of our investigation process. The Safety Reps are currently involved in a review of Pre and Post Job Briefs in support of a company-wide review. The Safety Reps continue to meet fortnightly and are well supported by site in addressing any issues raised by the site workforce.

2 DECOMMISSIONING PROGRESS

2.1 Clean and Drain Pond Project

Progress on Sludge Retrieval has been challenging; predominantly as a result of miscellaneous debris found on the Pond floor. A process of separating this was implemented and has significantly reduced debris in the system. However, accumulation of small metallic items continues to cause premature wear to parts of the pumping system (*see picture opposite of remaining sludge in Bay 8*).



Ultra High Pressure (UHP) water jetting in the West Blockhouse tunnel has been completed.

Shaving works in Bay 4 is ongoing to clear up remaining hot spots.

The Skip Refurbishment Plant (SRP) deplanting has progressed to the stage that the three skip cleaning tanks have now been size reduced and the associated pipework deplanted for disposal.

In the Pond Water Treatment Plant (PWTP), the pumps, blowers and pipework equipment associated with the sand filters system has been deplanted leaving the caesium removal units (CRUs) system outstanding.

De-planting work at the Pond Purge Sump (PPS) is ongoing, with all pipework now removed. The next step will involve removal of the 'lattice frame', which is supported from the top and hangs down to the bottom of the sump. Its removal will enable access for the sludge pump to the entirety of the sump.

- *Approximately 12m³ of sludge processed from Bay 8 to the Pond Purge Sump.*
- *700m² of 1078m² of concrete surfaces have been shaved.*
- *Approximately 25m³ of water remaining in Pond.*



SRP before deplanting



SRP after deplanting

2.2 Wet Intermediate Waste Retrieval & Encapsulation Plant (WILWREP)

The August quarterly WILWREP outage period is now complete and active commissioning is back underway. Drums 8 and 9 were processed in the canyon on Tuesday 22 August 2017, which is the first time two active packages have been processed simultaneously by the plant.

During recent retrieval operations the density of the sludge retrieved by the pump has been consistently low throughout the tank and blockages of the pump seem to have stopped. This meant that concentration of solids was only being increased slightly in the drum using the hydrocyclones, over a long period of time. Furthermore flushing of the hydrocyclone and associated pipework to clean them was adding clean water to the system resulting in a lot of time spent managing supernatant in the sludge retention tanks. Therefore a modification has now been implemented that allows a single transfer of the sludge to the drum without using the hydrocyclone system and minimising flushing water used. By filling drums in this manner, combined with continuing to remove supernatant from the top of the Sludge Retention Tank (SRT) as the particulate slowly settles out, the tank level has now been reduced to below 65% and the projected total number of drums to complete the SRT3 is not projected to increase significantly. Time to process each drum has also been reduced significantly.



2.3 Hunterston Reactor Cladding Project

In August 2017, Magnox issued the Invitation to Tender (ITT) for a project to clad the reactor buildings as part of the preparations for Care and Maintenance (C&M). Over the next 10 weeks, a shortlist of 6 companies will visit the site in order to better understand the project and then submit their bids. Magnox will then evaluate the bids with a view to placing a contract in December.

The project will involve installation of an aluminium standing seam system similar to the existing ILW store. This system has been shown to give the durability that we require to keep the reactor buildings watertight during the C&M period. As such the system will be expected to perform for 60 years.

There is a long history to this project. The original vision for C&M included for cladding the reactor buildings and a planning permission was granted for this. However, when the original glazing started falling out, a Temporary Weather Barrier (TWB) was conceived as an interim measure to ensure safety - this was installed between 2007 and 2010. As part of re-initiating the permanent cladding solution in 2016, we evaluated the original permissioned design and decided to keep the cladding to the existing lines of the building. The original permission would have resulted in the overall size, and visual impact, of the buildings increasing. In consultation with North Ayrshire Council (NAC) a new planning permission was submitted (Planning Application Ref **17/00740/PP**) and is now live on the planning portal.

Assuming contract placement in December 2017, we would anticipate mobilisation on site around July/ August with a 2 year build programme. Once a preferred supplier is chosen on the run up to Christmas, we will be able to update the SSG on timescales.



Original Glazing



2002 Planning Permission



Temporary Weather Barrier 2007-10



2017 Planning Application

2.4 Solid Intermediate Level Waste Encapsulation (SILWE) Project

Electrical Infrastructure - external earth ring main complete, internal earth terminations in progress. Internal infrastructure is progressing very well with glanding and terminating of lighting circuits and installing secondary containment. Testing of individual lighting circuits and fittings is progressing well, along with Fire, CCTV circuits and associated hardware. Implementation of the mains power cabling from the reactor supply boards is now in progress with the installation of the cabling containment and support system.

HVAC Installation - most of the service ductwork is in place and control dampers are in the process of being fitted. The ductwork pressure tests completed thus far have exceeded specifications.

Civil Installation - now that most of the excavation activities have taken place, all efforts are working towards laying blacktop in the coming days. The team are working to complete all kerbing and drainage channel installations before the blacktop team arrive.

Decorating - a team of flooring contractors are progressing well with Vinyl flooring and skirting throughout various areas within the building.



Integrated Testing Facility – Renfrew

At the Integrated Test Facility in Renfrew, setting to work of the conveyor system has now been completed and signed off. Work on the commissioning of the Supervisory Control System has now been completed. Interface testing of the fines handling system with the trial has also been completed.

Initial performance trials have been carried out on the Grout Plant System, testing the throughput of grout through the system and the wash-down procedure. Several processing problems have been noted and are now being addressed by the Project Team. Testing of alarms, data networks and hard wired checks are now in progress and on completion will lead in to a readiness review prior to Integrated testing of the equipment expected to start in early September.

2.5 Solid Active Waste Bunker Retrieval (SAWBR) Project

SAWBR successfully completed waste retrievals from Bunker 3 on 10 July 2017 with the safe export of the 614th package to the ILW Store. Since this milestone was achieved, the project has completed a programme of planned maintenance activities and completed all preparatory works in preparation for Bunker 2 breakthrough. This has included a full strip down and rebuild of the remote operated vehicles which remotely handle the waste in the facility as well as other key plant and equipment.

Breakthrough into Bunker 2 was achieved on 8 August and the wall penetration gradually enlarged to open up a steady supply of Bunker 2 materials to be retrieved. Package retrievals from Bunker 2 recommenced on 15 August 2017 and package count as of Monday 21 August is 621 packages.



Overhead view of Bunker 2 material cascading into Bunker 3 for retrieval



Wall view from Bunker 3 to Bunker 2 penetration

3 PEOPLE

3.1 Site HR & Occupational Health

The workforce numbers at Hunterston remain stable and there are no current restructuring activities being undertaken.

There have been no further updates in relation to the HM Government Reforms (£95K exit cap and pension reforms) and we are currently awaiting the draft regulations which will confirm that future payments in respect of exit from the NDA estate are in scope.

Plans are progressing well in relation to the Company EDI (equality, diversity and inclusion) Strategy. Stand downs have been held at all locations in order to highlight expectations of staff and supply workers and to communicate the EDI Strategy and plan of improvements. Mandatory training sessions are being scheduled over the next few months for all staff across the Company, with more in depth training to be delivered to Team Leaders and Line Managers. The Company have also identified a number of individuals who will receive Investigation training in order to equip them with the skills and knowledge required to conduct EDI related investigations.

A recent review of the Succession Plan for key leadership roles has been undertaken across the Company. This has been particularly important in relation to the future exit of the Parent Body Organisation as it has ensured that we are able to identify potential successors to the key positions within the Company. It also ensures that the Company continues to appropriately develop our people in order to maintain a competent workforce.

One of the focus areas of the Company Safety Improvement Plan is to improve employee physical and mental wellbeing. Through this initiative we have identified a number of nominees across the Company who have volunteered to be Mental Health First Aiders. Training will be delivered to these individuals over the next few weeks.

4 ENVIRONMENT (August 2016 to July 2017)

4.1 Radioactive Discharges

Solid

Low Level Waste (LLW) disposals to the Low Level Waste Repository (LLWR) continue. 329.40 m³ of LLW was disposed of during the twelve month period from August 2016 to July 2017. There is no limit on the volume or radioactivity content of LLW being disposed of under the site RSA authorisation. The main contribution to these waste consignments was redundant plant and equipment generated during decommissioning operations.

Liquid

The main sources of liquid radioactive discharges during the period August 2016 to July 2017 was dewatering of the pond and routine waste water arisings from the site active drain system. Active commissioning of the Wet Intermediate Level Waste Retrieval and Encapsulation Plant (WILWREP) is currently underway and is expected to take over as the main contributor to liquid waste arisings in the future as pond dewatering comes to an end.

| Radionuclide or Group of Radionuclides | Annual Limit | Activity discharged (August 2016 to July 2017) |
|---|--------------|--|
| Tritium | 30 GBq | 0.40 GBq |
| Caesium-137 | 160 GBq | 0.28 GBq |
| Plutonium-241 | 2 GBq | 0.13 GBq |
| All alpha emitting radionuclides not specifically listed taken together | 2 GBq | 0.36 GBq |
| All non alpha emitting radionuclides not specifically listed taken together | 60 GBq | 0.91 GBq |

Gaseous

The main contributions to gaseous radioactive discharges were ventilation systems operating in contamination controlled areas and reactor vessel 'breathing'.

| Authorised Outlet, Group of Outlets or other discharge route | Radionuclide or Group of Radionuclides | Annual Limit | Activity discharged (August 2016 to July 2017) |
|--|---|--------------|--|
| All authorised outlets taken together. | Tritium | 100 MBq | 56.4 MBq |
| | All other radionuclides (excluding tritium) | 3 MBq | 1.13 MBq |
| Discharges made as a consequence of reactor breathing | Tritium | 3000 MBq | 579.4 MBq |
| | Carbon-14 | 200 MBq | 58.8 MBq |

4.2 Non-radiological Environmental update

Surveillance and analysis of the sewage treatment works effluent continues to ensure compliance with the discharge licence. Treated sewage effluent from the plant continues to be independently assessed by SEPA throughout the year. Results from SEPA and on-site laboratory analysis verify that the sewage treatment works reed beds continue to work efficiently to maintain good quality effluent.

Monitoring of resources such as water, electricity and fuel continues to determine where use can be minimised. Site objectives and targets identified for resource use are monitored and reviewed in line with the site Environmental Management System.

Over the period August 2016 to July 2017, 100% of the non-radioactive hazardous waste, 99% of the non-radioactive non-hazardous waste, and 100% of the non-radioactive inert waste produced at Hunterston A was sent for re-use or recycling. Only 1.6 tonnes of waste was disposed to landfill during that period.

4.3 Environmental Events

There were no significant environmental events in the period August 2016 to July 2017.

5 RADIOLOGICAL SAFETY

Explanatory note: The maximum permissible dose to a radiation worker in the UK is 20mSv (milliSieverts) in a calendar year. The average annual radiation dose to the UK population from all sources is 2.6mSv. Collective dose is usually measured in man.milliSieverts. For example, if ten people were each to receive 0.1milliSieverts during a particular task, then the collective dose for the task would be 10 people x 0.1mSv each = 1 man.milliSievert.

Doses for the calendar year 2017, to the end of July, are as follows;

- *Approximately 147 employees received a total collective dose of 10.135 man.mSv between them*
- *Approximately 378 contractors received a total collective dose of 84.512 man.mSv between them*
- *The highest individual dose received by an employee was 3.266 mSv*
- *The highest individual dose received by a contractor was 5.110 mSv*

The majority of dose accrued in 2017 has been from a combination of the pond decommissioning project and other site projects. All doses in these projects have been prior-assessed, planned and are tracked throughout the project duration to ensure that no limits are exceeded and that doses are kept as low as reasonably practicable.

6 EMERGENCY PREPAREDNESS

Following on from the move to the revised Accident and Emergency Arrangements in April the site has continued to work on maturing and embedding the arrangements with continued training and small-scale contingency exercises.

The exercises involve many different site and contractor teams on each occurrence and use scenarios that are very realistic and more like the type of events that could occur as a result of each department's daily undertakings (*see pictures below*). The exercises serve to maintain and test the arrangements to ensure the site is ready to respond to any event that occurs in accordance with the new arrangements.



7 SOCIO-ECONOMIC AWARDS

To date, there has been a total of **11** applications in 2017/18 (**9 successful, 1 rejected, 1 withdrawn**). Please see below the table of applications that have been successful in receiving awards this year:

| MAGNOX SOCIO-ECONOMIC SCHEME 2017/18 - HUNTERSTON AWARDS | | |
|---|--|----------------|
| APPLICANT | DETAIL | AWARD |
| Ardrossan Rugby FC | Equipment for new outdoor gym project | £545 |
| Maritime Volunteer Service | New outdoor motor for Ardrossan boat | £1,500 |
| Largs Youth Theatre | Microphones for Youth Productions | £460 |
| Largs Viking Festival | Youth funding for Largs 2017 Viking Festival | £1,000 |
| Fairlie Community Association | Fairlie Hall Refurbishment Project Equipment | £803 |
| Largs Organic Garden | Community Garden at Largs Railway Station | £8,632 |
| Largs Colts FC | Football Strips for Largs Colts 2011 | £320 |
| Kilbirnie Junior Jets FC | Poly Suits for Holland Football Tournament | £377 |
| Vertex West Kilbride | Vertex Music & Arts Festival 2017 | £500 |
| TOTAL | | £14,137 |

8 SITE VISITS AND KEY DATES

Hunterston A Site continues to attract the right kind of interest through our good safety and business performance. A selection of visitors and key dates during the period included:-

| DATE | EVENT / VISIT |
|--------------|--|
| 12 June | Gary Ward – Magnox Waste Projects Programme Manager North |
| 12 June | Tony Moore – Magnox Waste Programme Director |
| 28 June | Mary Rodriguez – Magnox Waste Operations Programme Manager |
| 13 July | Tony Wratten – Magnox EHSS&Q Director |
| 17 July | Paul Heath - Technical Director |
| 17 - 20 July | Rob Eales Inspector of Nuclear Safety - ONR Inspection |
| 27 July | Site Closure Director Update to SSG chair Rita Holmes and SSG vice chair, John Lamb & Magnox Socio-Economic Local Review Panel Meeting |
| 24 August | Site Closure Director Update to SSG chair Rita Holmes and SSG vice chair, John Lamb & Magnox Socio-Economic Local Review Panel Meeting |