



HUNTERSTON A

SITE STAKEHOLDER GROUP REPORT SITE CLOSURE DIRECTOR

MARCH 2018

HUNTERSTON A SITE CLOSURE DIRECTOR'S REPORT TO THE SITE STAKEHOLDER GROUP MARCH 2018

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 continues to improve and remains good. It is now 45 months since the last Lost Time Accident (**LTA**) on site. The Site Total Recordable Incident Rate (**TRIR**) is 0.31 and the Day Away Case Rate (**DACR**) remains at zero. During the reporting period there have been no first aid case events on site.

The "Target Zero" campaign gathers momentum and raises hazard/topic awareness and is seen to be a proactive process expected to reduce the likelihood of unwanted events occurring on site relating to the relevant specific hazard/topic, in support of our company goal of Zero Accidents, Zero Incidents and Zero Harm. The topics for the last three months have been '*Slips Trips and Falls*' (November), '*Security*' (December) and '*Silica Dust*' (January). February 2018 topic is '*Risk Assessment*'.

We are continuously demonstrating a healthy and strong reporting culture and receive a steady number of Learning Capture Forms via our Q-Pulse reporting process.

In the coming months, Hunterston A site will be introducing and implementing a new Risk Assessment Process on site. This process will replace our current electronic database system that has been used on site for many years. This new Risk Assessment Process has been developed by Magnox and is being rolled out across all Magnox sites.

Safety Representatives

The company Health Environment Safety Advisory Committee (HESAC) visited Hunterston A Site during December 2017. The Company HESAC is made up from Trade Union appointed safety representatives and Magnox senior management. The Safety Representatives on Hunterston A Site planned the visit and arranged site tours and meetings on site. The HESAC team visited various areas on site looking at working practices and plant conditions etc. Feedback received was positive and greatly received.

The Contractors Safety Forum is well attended on site and meets every two months. The Contractors provide topics for discussion at this meeting which can be new innovative methods of working, information on events, new technology or areas of concerns which have been raised by their teams.

Magnox and Contractor Safety Representatives continue to work well on site and assist in raising concerns, safety issues or areas requiring improvement and meet fortnightly with site management at the Local Safety Forum. Issues raised are discussed, actioned and may even be raised to a topic on the agenda for the HESAC meetings that take place every two months.

2 EMERGENCY PREPAREDNESS

The site held its annual contingency demonstration exercise on 19 December 2017, when it demonstrated how it would deal with an injury in one of the active facilities. The site's contingency arrangements were demonstrated to assessors from the Magnox Independent Assurance team representing the Office for Nuclear Regulation (ONR).

The contingency response was swift but measured and appropriate. Strong performances were produced by the casualties, the Duly Authorised Person, the WILWREP response team and the site Emergency Response Team. The company assurance team described the response as being "calm and professional". The exercise was deemed as "adequate" in ONR terminology, which means it was successful and showed that the site was capable of dealing with such a situation.

The site is currently developing its exercise programme for 2018, the first item on which was an exercise on Saturday 3 February 2018 by Scottish Fire and Rescue utilising 30 fire fighters and High Volume Pumping equipment on the site access road which is capable of uplifting water from the Clyde Estuary and pumping to site. This is the first time that this equipment had been used for an exercise in Scotland.



3 DECOMMISSIONING PROGRESS

3.1 Clean and Drain Pond

Since the previous update, desludging operations have been completed in the Pond. Bays 7 and 8 have been drained, with a lot of equipment removed from Bay 8 to accommodate surface decontamination.

As some residual material was expected to be found during the clean-up, Bay 8 was split in two with a small bund wall. This has allowed shaving to progress on the East side whilst the West side has been kept wet to allow for draining of the desludging system, the removal of which remains in progress.

The walls and chamfers around the perimeter of Bay 8 have been cleaned using Ultra High Pressure (UHP) water jetting and this process is ongoing in Bay 7. As

shown in the picture, the contaminated floor surface is being removed using a concrete shaving technique. The shaved surface waste is then vacuumed away.

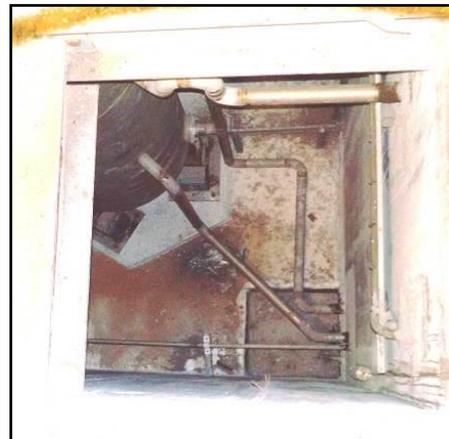


Good progress continues to be made towards the LC35 milestone.

- *All sludge processed from Bays 7 and 8 to the Pond Purge Sump.*
- *847m² of 1078m² of concrete surfaces have been cleared (as of 15/02/18)*
- *Majority of Pond water has now been removed and processed via the MAETP – only small volumes of wash water remain in West side of Bay 8 and in Bay 7.*

The Cartridge Cooling Pond Deplanting Works have steadily been progressed with the deplanting of the Skip Refurbishment Plant Dosing Room now complete. This involved the removal of a stainless steel acid tank from its bund, the pump system, steelwork and emergency shower.

At the Pond Water Treatment Plant, the man access concrete roof blocks were removed from Caesium Removal Unit (CRU) Cell No2 and an initial remote radiation survey conducted. Preparation work at CRU cell No1 is now ongoing to the same stage.



View inside CRU Cell No2 showing the resin vessel

3.2 Wet Intermediate Waste Retrieval & Encapsulation Plant (WILWREP)

Twenty five drums have now been completed during active commissioning of the WILWREP Plant. Furthermore the canyon has now been filled with four active drums at the same time for the first time during active commissioning, representing an increased confidence in the encapsulation plant. Transition into the operations phase is underway with the waste operations team now dictating day to day business and waste projects focusing on completing any outstanding commissioning tasks and finalising the Operational Safety Report. The plant remains in active commissioning under control of the Test and Commissioning Panel.

Progress with active drums beyond Drum 25 has been slow due to a breakdown of the hydrocyclone pump, several setbacks in replacing it and then a failure of the replacement pump, although this work is now completed. During the break in production the team have focused on knocking the sludge piles down from the corner of the tank and then agitating the sludge with new tooling. Early indications are that this seems to have been successful and we expect to see some difference in performance of the retrievals system when commissioning recommenced.

Acid Storage Facility reconfiguration work has continued with all old acid transfer pumps removed and new ones installed in position. Work is now underway to extend the scaffold stairway access to the top level of the facility.

3.3 Solid Intermediate Level Waste Encapsulation (SILWE) Project

Site installation is progressing well as floor space continues to give way to plant. The Heating Ventilation and Air Conditioning (HVAC) installation is nearing completion with most of the system pressure tests complete. HVAC electrical fit out continues alongside the ductwork insulation and cladding. Civil infrastructure is close to completion and the team are now working to finalise the building fabric and surrounding hard landscaping.

Offsite, the robotic assemblies are in the process of undergoing Factory Acceptance Functional Checks, prior to delivery to the Hunterston site.

The Integrated Test Facility is now completely empty with all components delivered and in the process of being installed at the Hunterston Site. All Motor Control Centre (MCC) electrical panels have been installed and are currently being electrically interconnected by multi-core cables. The conveyor assemblies are now installed and in the process of being permanently fixed into position. The grout plant installation is progressing well with the main components already in place. The main focus is to be in a position to power up by the end of April 2018.



3.4 Hunterston Reactors Project

Reactor Cladding

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). Magnox are currently evaluating the supply chain bids with a view to placing a contract early 2018. The project is moving through the procurement process with ongoing discussions taking place with the Supply Chain.

The project will involve installation of an aluminium standing seam system similar to the existing Intermediate Level Waste Store at Hunterston A. Material samples of the proposed standing seam system have been requested to aid stakeholder engagement. After Supply Chain discussions are complete, the project will be able to update the Site Stakeholder Group on timescales during further engagement sessions.

Risk Based De-planting

This package of work will produce a plan that outlines the items of plant that need to be removed from the reactor buildings. The scope also includes the removal of the plant items during the execution phase prior to entry into Care and Maintenance (C&M).

The project is currently in the development phase and the Supply Chain has been engaged for specialist support to assist with non-intrusive surveys during this phase of the work. To date the project has completed 27 assessments in R1 Steam Raising Unit (SRU) Hall. The assessments range from single components such as a CO₂ Tank, to complex systems like the SRU Filters. The project is currently working up an optimised plan to capitalise on the opportunity of overlapping phases of work where possible.



SRU Filters



CO2 Tank

3.5 Solid Active Waste Bunker Retrieval (SAWBR) Project

After returning the plant to service on Thursday 26 October 2017 following the failure of the shield door component drive, SAWBR has enjoyed a very pleasing period of plant health which has resulted in very strong throughput figures being achieved.

A very impressive 77 packages were produced across the November 2017 – January 2018 quarter which included shutdown for the festive period and represents the strongest period of performance the plant has enjoyed since commencing waste retrievals in 2014.

Waste retrievals from Bunker 2 continue and as of 15 February 2018, the SAWBR team has recovered 117 of the expected 321 packages worth of waste from Bunker 2. This provides an overall figure of **732** packages of solid ILW recovered to date.

When these packages are combined with the wet waste packages recovered to date within WILWREP, the site has now safely recovered over **50%** of the overall High Active Waste at HNA, with over **750** packages now transferred into the ILW Store.

4 PEOPLE

4.1 Site HR & Occupational Health

Consultation in relation to the proposed changes within Shift Operations at Hunterston is ongoing and it is still expected that the change will be implemented in Spring 2018, subject to timing of regulatory approvals.

EDI (Equality, Diversity and Inclusion) continues to be a focus across the Company and mandatory "*Respect and Inclusion*" training sessions were delivered during January 2018 at Hunterston for all line managers, staff and some supply workers. The training received very positive feedback. The results of the NDA EDI survey, which was recently conducted across the whole of the NDA estate, have now been published and work is being carried out across Magnox to identify actions required to address any areas of concern arising from the results.

The Company Safety Improvement Plan 2017-18 contains a focus area on Workforce Well-Being with an improvement action set out to improve employee mental and physical health and well-being. A Key element of the improvement action is to establish, train and develop Mental Health First Aiders at each of our facilities. A number of Mental Health First Aiders have recently been trained and appointed to the role at Hunterston. These individuals will play an important role in raising awareness and helping to reduce the stigma associated with mental health and promote early intervention enabling more effective recovery and positive mental health.

The health of the workforce remains generally good, although overall sickness levels remains above our Company target due to a high number of long term sickness cases in the rolling 12 month period. These cases continue to be managed in conjunction with Occupational Health with employees supported appropriately.

5 ENVIRONMENT (January 2017 to December 2017)

5.1 Radioactive Discharges

Solid

Low Level Waste (LLW) disposals to the Low Level Waste Repository (LLWR) continue. 284.14 m³ of LLW was disposed of during the twelve month period from **January 2017** to **December 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 **January 2017** to **December 2017** was dewatering of the cartridge cooling ponds, commissioning of the new WILWREP facility and routine waste water arisings from the site active drain system.

Radionuclide or Group of Radionuclides	Annual Limit	Activity discharged (January to December 2017)
Tritium	30 GBq	0.32 GBq
Caesium-137	160 GBq	0.24 GBq
Plutonium-241	2 GBq	0.06 GBq
All alpha emitting radionuclides not specifically listed taken together	2 GBq	0.17 GBq
All non-alpha emitting radionuclides not specifically listed taken together	60 GBq	0.49 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 (January 2017 to December 2017)
All authorised outlets taken together.	Tritium	100 MBq	56.4 MBq
	All other radionuclides (excluding tritium)	3 MBq	1.04 MBq
Discharges made as a consequence of reactor breathing	Tritium	3000 MBq	571.74 MBq
	Carbon-14	200 MBq	60.37 MBq

5.2 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 independent off-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 **January 2017 to December 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 **1.7 tonnes** of waste was disposed to landfill during that period.

5.3 Environmental Events

Following a programme of inspections against the requirements of the Radioactive Substances Act 1993 (RSA93) Authorisation held by Magnox Ltd for the Hunterston A Site; SEPA have assessed the site as **"Excellent"** with regards to compliance with the sites RSA93 Authorisation.

There were no significant environmental events in the period **January 2017 to December 2017**.

6 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 December, are as follows;

- *Approximately 184 employees received a total collective dose of 16.587man.mSv between them*
- *Approximately 544 contractors received a total collective dose of 116.809 man.mSv between them*
- *The highest individual dose received by an employee was 4.341 mSv*
- *The highest individual dose received by a contractor was 7.202 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.

7 MAGNOX SOCIO-ECONOMIC SCHEME

In 2017/18 there has been a total of **16** applications (**13 successful, 1 rejected, 2 withdrawn**). Please see below the table of applications that have been successful in receiving awards from the Magnox Socio-Economic Scheme 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	Youth Productions Microphones (<i>see picture below</i>)	£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
Vertex West Kilbride	Vertex Music & Arts Festival 2017	£500
Fairlie Primary School PC	Staging for use by School and community use	£750
West Kilbride Festival Cttee	2017 Yuletide Celebrations–Kids Selection Boxes	£250
Dalry Burns Club	Burns Schools Competition 2018	£425
Garnock Valley Pipes & Drums	Practice Chanters	£375
Intl Sheepdog Trials Committee	2018 National Competition at Portencross	£500
TOTAL		£16,060



8 SITE VISITS AND KEY DATES

Hunterston A Site continues to attract the right kind of interest through our good safety and business performance. Below is a selection of visitors / key dates during the period.

DATE	EVENT / VISIT
5 December 2017	Safety Leadership workshop
7 December 2017	Hunterston Site Stakeholder Group (SSG) Quarterly Meeting
13 December 2017	Company HESAC at Hunterston A Site
14 December 2017	Hunterston Site Joint Council
18/19 December 2017	Police Scotland – Security Awareness Presentations on site
14 December 2017	Fire Service - Discuss site accident and emergency arrangements
3 January 2018	Closure Director Safety Briefs – Site Standowns
25 January 2018	Site Closure Director Update to SSG Chair, Rita Holmes and SSG Vice Chair, John Lamb and Magnox Socio-Economic Local Panel Meeting
30/31 January 2018	NDA visit – Ranajoy Dey , Ed Bennett & Ian Doyle
3 February 2018	Scottish Fire and Rescue Exercise Hunterston 'A'
6 February 2018	Safety Leadership workshop
7 February 2018	Hunterston Site Joint Council
8 February 2018	Horizon - Knowledge Sharing Visit to WILWREP (<i>see picture below</i>)
19 - 21 February 2018	NDA - Site Assessment Group
22 February 2018	Site Closure Director Update to SSG Chair, Rita Holmes and SSG Vice Chair, John Lamb and Magnox Socio-Economic Local Panel Meeting

