

Dounreay Progress Report

Up to 16th January 2019

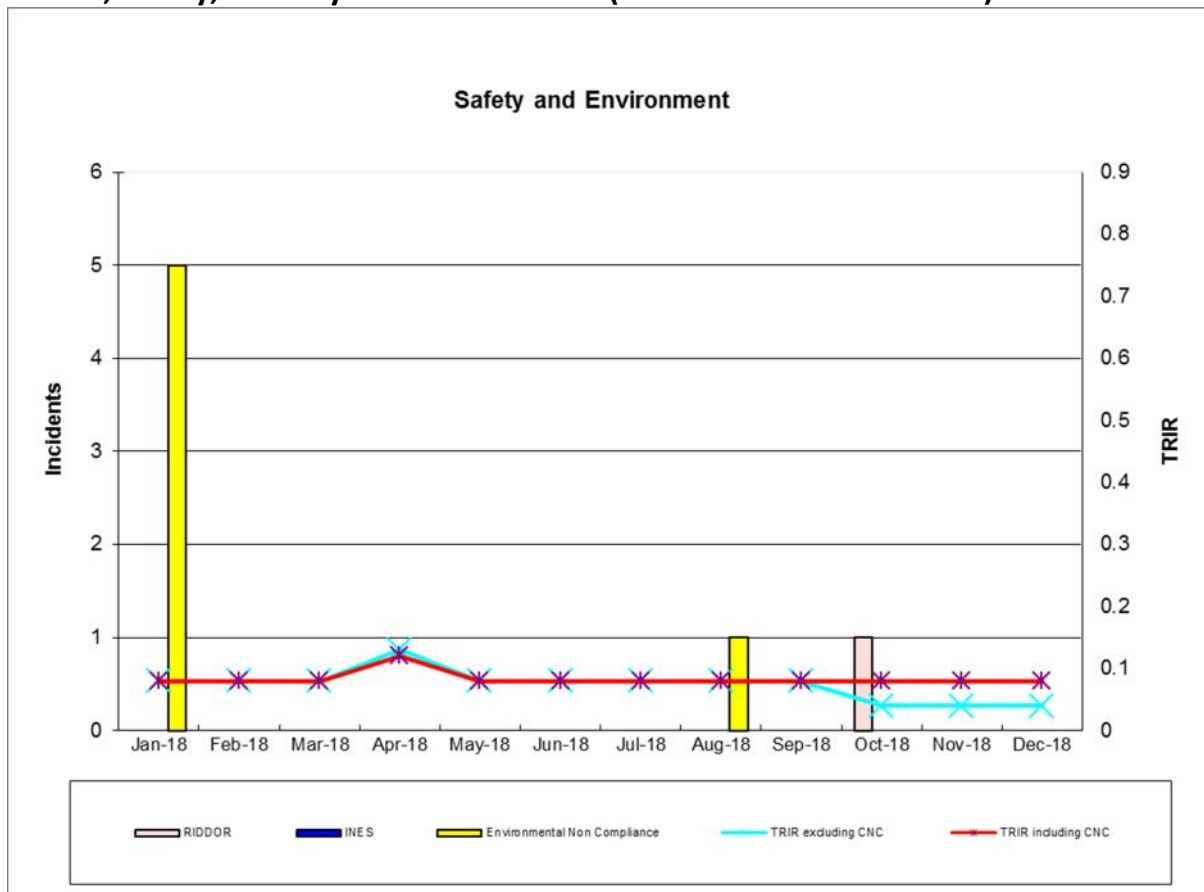
DSG(2019)P003

Site decommissioning programme

The site's delivery priorities continued to be the exotics programme, breeder removal and improved resource utilisation – always ensuring that work is undertaken in a safe, secure and environmentally responsible manner.

The Dounreay team has now submitted its baseline change proposal to the NDA setting out the impact of delivering the exotics work on the wider site decommissioning programme. This is now being assessed by the NDA. In parallel development of an updated 'performance plan' or 'mission plan' is underway. This is expected to include around 9000 activities that needs to be carried out between now and interim end state and work is in hand to review this information in terms of start/finish date, logical sequence and budgeted total cost. This plan will always evolve throughout the decommissioning process but the updated version is expected to be prepared by September 2019.

Health, Safety, Security and Environment (as at end December 2018)



) As of 22nd January 2019, the site has gone 463 days since a lost time accident and the site's total recordable incident rate remains at 0.04 (as of December 2018).

-) During this period or reporting there have been no lost time accidents or RIDDOR reportable events.
-) On 17th January 2019 the site held a site accountancy exercise. This was successful and feedback received has identified some learning points which will be considered and taken forward.
-) Winter preparedness roadshows were held during the month to December for Dounreay workforce.
-) In November 2018, Dounreay won the Babcock International Group's Safety Programme Award at its Health and Safety Excellence Awards. This award recognised the work undertaken to introduce the Dounreay Professionalism and the resulting improvements in safety, security and environmental performance.
-) ONR visited site on 13-15 November 2018 for site inspections. ONR considered the arrangements and their associated implementation for LC12 (Duly authorised and suitably qualified and experienced persons), LC26 (Control and supervision of operations) and LC28 (Examination, inspection, maintenance and testing) to ensure that they met the required standards.
-) AFNOR auditors visited site in December to conduct a surveillance audit looking at processes against ISO 9001 (Quality Management), ISO14001 (Environmental Management) and OHSAS 18001 (Occupational Health). They were highly complementary of the interactions they had with site personnel and have confirmed continued certification.
-) The REPIIR Radiation (Emergency preparedness and public information) Regulations 2019 are currently being drafted. It is anticipated that these will be laid in UK Parliament late spring 2019. Once law there will be an implementation period. This has the potential for changes to the off-site emergency planning.

Site performance

Appendix 1 of this report provides information of the key project milestones for 2018/19. Specific performance achievements are outlined below.

Reactors

-) At PFR, in support of ongoing hazard reduction, all active components currently held in west end storage locations have been lifted, characterised and replaced. This is to help accurately assess the radiological and alkali metal inventory of each component, and determine the plan for size reduction and/or assignment to the correct approved waste route.
-) The first of three water vapour nitrogen tools has been successfully installed and sealed into the reactor primary pump valve 2 penetration. Trialling of the next 2 in-reactor tools has commenced. The first of these is the rotor bucket grab tool which will remove the fuel transfer rotor buckets (FTRB) from the reactor. The FTRGs are about 4 metres in

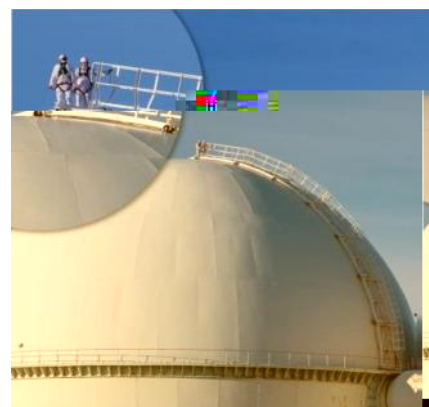


length and weigh 320 kgs. A third set of tools will follow in due course.

-) The Dounreay Materials Test Reactor, the first operational nuclear reactor in Scotland, is due to be demolished. A contract has been awarded to Cavendish Nuclear and its partners, JGC Engineering, KDC and Frazer-Nash Consultancy for the dismantling of the reactor block and demolition of the structure. It is the latest in a number of high profile contracts awarded to companies such as Graham Construction and Nuvia for upcoming decommissioning projects and follows a robust assessment of each of the competing bids received for the project.

-) During November workers scaled the DFR dome to undertake some survey work.

-) DFR has transferred 10 flasks of breeder elements to DCP.



Fuel Cycle Area

-) **D1200:** The first contact handled intermediate level waste from a cell in Lab 33 has been removed. The cell houses a turntable made from a gun turret which came from World War II battleship HMS Howe. Lab 33 is one of the 14 labs currently being decommissioned.

-) **D1204:** The project team is currently reviewing its pond decommissioning strategy to introduce engineered controls to reduce operator dose uptake during pond installation/commissioning tasks.

-) **D1211:** The pump well has been cleared of sludge and the redundant equipment and fixtures have been removed and processed as waste. Core samples were taken from the walls and floors to allow the Interim End State Delivery team to decide how much of the surfaces need to be removed due to contamination.



Fuels

-) Good progress continues to be made to remove nuclear fuel from the site. Advice has been provided to community representatives that they may see a strong security presence before and during the next phase of transports. This is normal for nuclear materials with a high security rating. We apologise for any temporary inconvenience caused by these planned measures.

Waste

-) DSRL have now awarded a contract for the production of a Feasibility study to assess viability of opening a new metal treatment waste route for the site. This contract has been awarded to Cyclife - part of the EDF group whom are leading nuclear waste management specialists.

-) In parallel to the production of the Feasibility study, DSRL are considering undertaking a pilot trial sending 4 historic bulk metal items to a Metal Treatment Facility. The aim of the pilot would be to further underpin any decision making on permanently establishing a new waste route for the site.

Construction

A construction directorate is in the process of being established under the leadership of Construction Director David Hubbard.

-) Four new groundwater monitoring boreholes have been drilled up-hill from the shaft to improve the monitoring of groundwater around the shaft. These are required to better understand the movement of groundwater through the area in advance of the shaft retrieval work. Structural Soils Ltd carried out the drilling work.



-) Construction of the DCP store extension has been awarded to Grahams Construction and will see the waste store being built by mid-2021.

The Interim End State Delivery Team

-) The Highland Council has now provided the site with the conditions relating to the approved Dounreay Phase 3 planning submission. In total there are 8 conditions placed on this planning submission which relate to the retrieval of the low level waste retrieval and waste repackaging facility, development of the flask and waste facilities, remediation works in any zone or sub-zone, and landscape works.
-) Work is ongoing to redefine the Dounreay end state which will outline the site wide strategic options for the site which will be reflected in the decommissioning programme going forward. DSRL has agreed a content process with SEPA and the Head of Highland Council Planning Authority to agree in principle the process by which portions of site can be closed on a zonal basis, in advance of the interim end point.
-) GRR Guidance has now been jointly published by SEPA, the Environment Agency and Natural Resources Wales. The Guidance explains what operators need to do to surrender their environmental permits when all activities involving the management of radioactive waste have ceased. The published GRR will be used to provide a framework against which the ongoing decommissioning and remediation of the site can be progressed. Dounreay has drafted a booklet to provide a high level explanation of what this means to the Dounreay site.

Particles

-) Between October 2018 and 17th January 2019, two particles were recovered from the West Dounreay Foreshore. The first found on 15th November 2018 was classified as relevant while the second particle detected on 11th January 2019 was in the significant category.
-) Analysis of the unusual particle recovered from the Dounreay foreshore in 2016 is ongoing. The particle is undergoing laser ablation at the University of Southampton, to determine its carbon content.

Heritage

-) Five heritage objects were collected in the period:
 - Johnson Controls coaster for advertising the Dounreay helpdesk
 - Craft Apprentice signed competency certificate for electricity – dated 1977
 - UKAEA Dounreay booklet "Design office abbreviations, symbols and statements"
 - Industrial superannuation scheme booklet - dated 1973
 - UKAEA clear plastic ruler which incorporates a sliding jigsaw puzzle about learning

-) Four leavers completed a Dounreay Memories form.

-) A model of the sphere is on loan from Caithness Horizons to the new V&A Dundee museum and is featured in the Scottish Design gallery. The museum attracted 100,000 visitors in the three weeks after opening on 15 September 2018. It aims to attract 500,000 in the first year.

Commercial

-) As of December 2018 commercial spend for this financial year includes:
 - Total supply chain spend: £85.5M
 - SME Spend: £25.2M
 - Suppliers: 646 (60% SMEs)

-) The following contracts were awarded during December:
 - Deplanting, decommissioning and demolition of DMTR Facility (Cavendish Nuclear)
 - Metallic Waste Treatment feasibility (EDF Cyclife)
 - DCP ILW Store Extension (Grahams Construction)

Ongoing contracts include:

- FCA Pipebridge
 - NDA7 update
 - Unshielded Store Extension to DCP overhead container handling crane
 - Supply of 30T forklift
 - Decommissioning services (framework)
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-) Three Dounreay representatives visited France for a demonstration of automated tools. This was co-ordinated via the Dounreay LINC initiative with a work package being awarded to international company ONET, who will be working with local firm JGC on the tools that could potentially be used to decommission the Fuel Cycle Area's high active cells.

 -) Representatives from Dounreay attended the annual Nuclear Decommissioning Authority supply chain event held in November. Dounreay had an exhibition to showcase opportunities for suppliers and particularly for SMEs. Over 1700 visitors attended the event.

General

Staffing (as at end of December 2018)

	FTE Target	FTE Actual /Forecast
Current - DSRL	1,105	1123.5
Current – ASW		128

December 2018: 5 new starts, 2 resignations,



legacy and pioneering work.

-) Steve Beckitt delivered a presentation at the Nuclear Industry Association's annual conference in December focussing on the importance of innovation in delivering the site's programme.
-) Senior Project Manager, Gordon Tait has organised an IMechE nuclear decommissioning knowledge transfer workshop to be held on 13th February. This is aimed at sharing remote cutting experience as well as a learning opportunity for the next generation of engineers.
-) The Dounreay Women's Network submitted a number of nominations for the annual Women in Nuclear (WiN) awards with Phil Craig being shortlisted in the 'Ally of the year' category for the work he delivered at Dounreay on equality, diversity and inclusion issues. The winners will be announced at the WiN conference next year.

Dounreay Site Restoration Limited

17th January 2019

APPENDIX 1 - PROJECT MILESTONES FOR 2018/19

Area	Milestone	Due Date	Status
Fuel Cycle Area	D1200 Lab 79 decommissioned	Aug 2018	Complete
Fuel Cycle Area	D1204 mixer settle boxes	Sept 2018	Delay due to crane issues
End State	NDA Gate A paper for redefining the end state	Sept 2018	Expected end March 2019
Waste	Waste verification checks of D3110 wastes	Dec 2018	Complete
Reactors	Manufacture complete for skid set A and DFR skid set	Dec 2018	Complete
Fuel Cycle Area	First block cut from cell walls in D1217	Jan 2019	Expected end of Feb 2019
Reactors	Design, manufacture and trials of 4 tools for PFR reactor dismantling.	Jan 2019	On target
Waste	Shaft and Silo HAZOP 2 studies	Mar 2019	Expected June 2019
Reactors	Breeder fuel 8 flasks	Mar 2019	Complete
Waste	Shaft and Silo borehole monitoring	Mar 2019	

Key:



On target to deliver
At risk
Missed

GLOSSARY

Abbreviation	
BCP	Baseline Change Proposal
DACR	Days Away Case Rate
DCP	Dounreay Cementation Plant
DFR	Dounreay Fast reactor
DIT	Dounreay Improvement Team
DMR	Dounreay Modification Report
DMTR	Dounreay Materials Test Reactor
DPF	Dounreay Planning Framework
DSRL	Dounreay Site Restoration Ltd
EIA	Environmental Impact Assessment
ES	Environmental Statement
IFBS	Irradiated Fuel Buffer Store
IFC	Irradiated Fuel Cave
INF	Incident Notification Form
LLLETP	Low Level Waste Effluent Treatment Plant
LLW	Low level waste
LTA	Lost Time Accident
mSv	milli Sieverts
NDP	NaK Disposal Plant
OJEU	Official Journal of the European Union
ONR	Office for Nuclear Regular
PBO	Parent Body Organisation
PCP	Project Control Procedure
PFA	Pulverised Fly Ash
PFR	Prototype Fast Reactor
PFR	Prototype Fast Reactor
PSR	Preliminary Safety Report
RAMT	Radioactive Material Transport
RIDDOR	Reporting of injuries, Diseases & Dangerous Occurrences Regulations.
RSA	Radioactive Substances Act
SEPA	Scottish Environment Protection Agency
SID	Sodium Inventory Destruction Plant
STA	Sample Tank Annex
TRIR	Total Recordable Incident Rate
WRACS	Waste, Receipt, Assay, Characterisation and Supercompaction