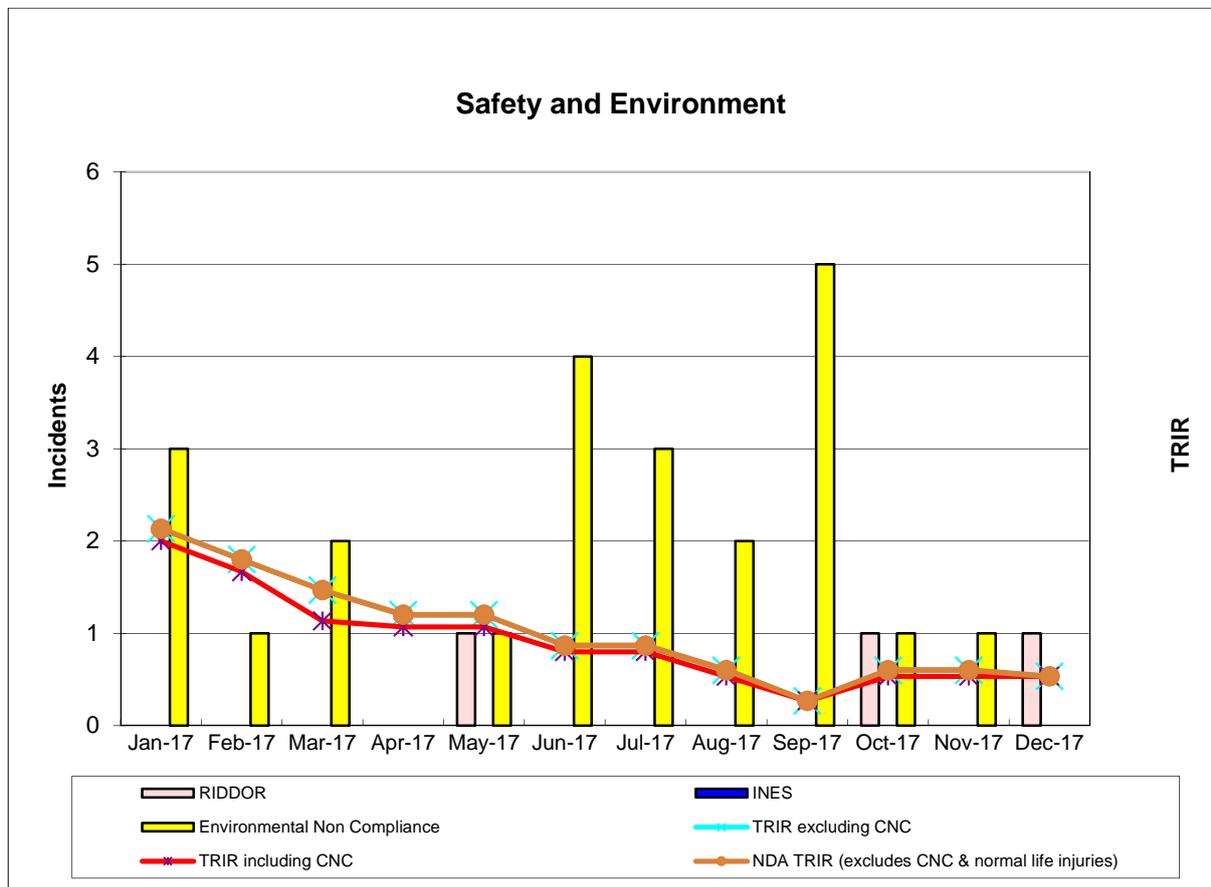


# Dounreay Report (up to 16<sup>th</sup> January 2018)

## Site decommissioning programme

Discussions continue with NDA on the updated decommissioning plan which reflects the prioritisation and additional scope for nuclear materials. During the rest of this financial year (2017/18), the site's delivery priorities will continue 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.

## Health, Safety, Security and Environment



- ) The site's total recordable injury rate (TRIR) stands at 0.08 (as of 30<sup>th</sup> Dec 2017) which is an improvement from the last period (0.09)
- ) During December a loud noise was heard during use of the building Goliath crane to move the Element Transfer Flask (ETF). The ETF was moved onto its discharge port to

make safe. Following an investigation involving alignment checks, a cracked long travel crane rail was identified, the crack being around one metre in length. This has been reported to regulators as a RIDDOR Dangerous Occurrence. A Level 3 investigation has been convened.

- ) SEPA has confirmed a number of minor environmental non-compliances relating to D1215 Fan space extract failure, corrosion with PFR Fans 53 and 54, D1203 duct corrosion and perforation and PFR Fan 6 replacement ductwork. Two non-compliances have also been identified relating to alpha assay drum of a drum of waste in WRACS.
- ) Following an AFNOR audit last year, Dounreay has now received its certificate of registration, demonstrating compliance with ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007. The certificate remains valid until 2021 and annual surveillance audits will take place.

### **Site performance**

Appendix 1 provides information of the key project milestones for 2017/18. Specific performance achievements are outlined below.

### **Reactors**

- ) The first four blocks from the second row of the DFR east pond were removed and packaged into HHISO.
- ) Strip out of redundant cabling in the DFR mezzanine and ex-control room areas is underway.
- ) A fuel element carrier grab tool has been designed and manufactured to enable removal of 37 carriers that are within PFR. The image shows the tool during final trials at the PFR cell 2 trial facility. This is the 4<sup>th</sup> reactor dismantling tool to be designed, delivered and successfully trialled this financial year.
- ) A store behind PFR, known as DN026 has been de-clad, and the frame structure will be dismantled at a later date.
- ) Five companies bidding for the contract to demolish Dounreay Materials Test Reactor visited site recently. It allowed them to understand more about the work and meet and integrate with the Dounreay team who will oversee the project. Meanwhile the D1251 building (DMTR complex) has now been demolished following a 7 year decommissioning programme.



## **Fuel Cycle Area**

- ) External walk-downs of all FCA ventilation systems have been completed.
- ) **D1200:** A ventilation stack cone has been fitted as part of an upgrade project.
- ) **D1204:** The D1204 team has safely removed four slab tanks and two Holley Mott vessels from the medium active cell achieving a milestone.
- ) **D1211:** Active containment has been installed which allows the project to move to the next phase of decommissioning.



## **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**

- ) The BPM (Best Practical Means) for the LLW pits is currently being updated. SEPA has indicated this is a requirement to allow them to review how DSRL proposes to improve the radionuclide containment during periods of low groundwater level, as required by the RSA Authority.
- ) Liquor (PFR raffinate) was transferred from D1208 storage tank to DCP and has now been sampled.
- ) Additional ventilation plant has been installed for PFR raffinates with the installation of the lid posting facility installed in Dounreay Cementation Plant and site acceptance tests.

## **Shaft and Silo**

- ) A technical note and proposed programme for upgrades for the shaft groundwater monitoring has been submitted to SEPA. Further discussions will take place.

## **The Interim End State Delivery Team**

- )] The Environmental Closure and Demolition (ECD) department has been renamed and is now called The Interim End State Delivery team (IESDT) to reflect the role of the team in supporting all projects prepare for a compliant end state.
- )] The Phase 3 planning application is being processed and the council is reviewing consultation responses. The application is on schedule and the council will issue a decision on 23 April. Planning meetings with THC and SEPA are ongoing while Phase 3 application is processed. The NDA is developing a UK wide planning strategy for final Site End States and DSRL is providing support.
- )] An internal workshop was held to identify opportunities to optimise the site end state. Over 100 potential opportunities were identified at a high level. Further work will be carried out to explore whether these opportunities could be delivered.
- )] Primary legislation is required to facilitate the Proportionate Regulatory Control of Nuclear Licensed sites. As a result of Brexit, there may be delays in passing the requirement legislation through Parliament.
- )] Members of the IESDT attended an NDA estate-wide meeting to discuss the potential GRR regulation primarily regarding in-situ disposal and how this could potentially impact the end states on site.
- )] The Site Wide Environmental Safety Case and Waste Management Plan continues to be developed, in line with the guidance with GRR requirements.
- )] A survey of all site stacks using a drone has now been completed. This information will be linked into the site ventilation enhanced maintenance programme.



## **Particles**

- )] On 3 January 2018 a significant particle was detected and removed from the Dounreay foreshore.
- )] A review of the Particles BPEO has been completed and the technical document has been externally peer reviewed. The document is now being updated following submission to the Environmental Review Committee.
- )] As previously reported, a particle was found on the Dounreay foreshore in December 2016 that was not similar to the particles normally detected and removed. SEPA requested that the particle be sent to Stirling University for further examination and they have now completed their work and returned the particle to site. It is now planned to dissolve the particle and carry out further radiological and chemical analysis. Discussions with SEPA continues on the analysis plan – this is taking some time as with a

very small single particle it is challenging to ensure analysis is carried out in such a way that provides meaningful results.

## Heritage

- ) The Heritage Advisory Panel held its 8<sup>th</sup> meeting in Inverness on 17 Nov 2017.
  
- ) Fourteen objects were donated to Caithness Horizons:
  - Site restoration trophy (Caithness glass rosebowl)
  - DMTR tube (plain aluminium tube for DMTR element)
  - Police badge set
  - Bone china ashtray
  - Ladybird book 'Nuclear Power'
  - Christmas card
  - Employment offer letter (original dated 31 Jul 1974)
  - PFR clock
  - Fire Brigade badge
  - Teaspoon (image of sphere)
  - International safety award 2011
  - Pay ID card (from 1967)
  - UKAEA coat of arms model
  - Bracelet charm (image of sphere)
  
- ) Four Dounreay apprentices have been working with other young people and the V&A Dundee museum, on the Scottish Design Relay project to create a prototype featuring the sphere, for display in the V&A Dundee museum, which is opening in summer 2018.  
<https://www.vandadundee.org/news-and-blog/news/vanda-dundee-launches-the-scottish-design-relay>
  
- ) Five heritage objects were collected in the period:
  - UKAEA tie
  - Dounreay householders handbook 4<sup>th</sup> edition (early 1970s)
  - PFR headscarf
  - Teletector radiation monitor in wooden box (early 1960s)
  - Metric converter pocket sized booklet
  
- ) Seven leavers completed a Dounreay Memories form.



- ) A new PhD student, Annie MacDonald, is due to visit Dounreay along with Jim MacPherson, UHI to begin working towards a thesis. The topic is “Archiving a nuclear past: exploring the nuclear energy industry and its community impact in Britain”. This will examine the impact of the nuclear energy industry on the communities of Britain, and consider how this history is collected and curated for wider social benefit. This research will utilise public history techniques including oral history and community outreach to inform the development of a national civil nuclear archive. A case study approach will explore ideas of gender within civil nuclear industry, with the aim of assessing how curation of nuclear energy collections is impacted by power dynamics of gender and labour. More broadly, this will inform how issues of representation are addressed in curatorial models.

## Commercial

- ) LINC registrations continue to grow and the number of companies registered now sits at over 120. The second opportunity was published in November and relates to processing cells - in cell components size reduction methodology. This has resulted in 7 submissions from the registered companies, 3 of which are actively collaborating with other LINC companies for a solution which is the one of the key objectives of LINC. These submissions are currently being reviewed by the project team. Two opportunities per quarter will be made available to the scheme.
- 
- ) A number of major procurements are presently running including:
- The formal commercial process for the decommissioning services framework valued at £400M has started to put a decommissioning services framework contract in place with the competition notice published just before Christmas. This will provide the right supply chain expertise and support to help with construction and demolition activities as part of the next phase of decommissioning. The framework is programmed to be awarded in August 2018.
  - The competition for ICT (Information Communication Technology) will reach a conclusion towards the end of March 2018.
  - The Maintenance, Repairs and Operations (MRO) supplies contract, valued at £6M, will be awarded in March 2018. This is to identify a single supplier of low value consumable items for the site.
  - Tender returns for the demolition of DMTR, valued at £7M, are due in March 2018.
  - Tender returns for the removal of DFR residual NaK are due in March 2018.

- ) A scaffolding framework contract has recently been awarded to three companies, two of these are local companies.
- ) Local companies, Calder Engineering, Jacobs, JGC Engineering, Forsyths and Gow's in partnership with Serimax have been successful in securing the framework contract for major mechanical, electrical, control and instrumentation services.

## General

### Staffing (as at end of December 2017)

	FTE Target	FTE Actual /Forecast
<b>Current - DSRL</b>	1,147 (LTP)	1171.5
<b>Current – ASW</b>	N/A	109

December 2017: 1 new starts, 1 resignation, 12 voluntary redundancy.

- ) **Dounreay staffing profile:** Work continues to update the staffing profile provided to CNSRP in October. It is expected that an update of the resource requirements will be available early April 2018.
- ) **Voluntary redundancies:** The programme of voluntary redundancies is now in underway. A small number of employees left in the period up to 31 December 2017 and there will be some further departures by 31 March 2018. The bulk of staff will leave during the period April to June 2018, with a residual small number of people expected to leave during the rest of the financial year. Knowledge Transfer plans are being developed and transition support for leavers is being offered.
- ) A Dounreay transition board has been established to oversee the formal processes associated with people leaving the business, including the management of change process. This ensures that detailed arrangements are in place to protect safety, security and the environment as responsibilities are changed to accommodate individuals who are leaving. The second meeting has recently been held.
- ) Recruitment is now underway for apprenticeships. Advertisements have been published in local papers and other media. Graduate recruitment will be advertised shortly.
- ) **Dounreay Women's Network:** The network continues to grow with membership increasing month on month. In order to achieve the ambitious goal of being recognised as the leading NDA site for employing women in leadership roles, the focus this year has been on enabling activities that help build confidence and identify new opportunities amongst members. Mentoring has been a key focus area with the development of a new group mentoring programme that is tailored around common themes. A trial programme is now underway and feedback from this will determine if the mentoring

programme is adding real value with a view to cascading across the site. Other activities have included attendance at confidence building sessions, exchange visit to other sites within the nuclear estate and shadowing opportunities with senior women within the partner organisations.

As of 22<sup>nd</sup> January 2018, it was confirmed that Fiona Bruce, Executive Support Manager, is one of three national finalists in the 'champion of the year' category of the Women in Nuclear UK awards due to be held at the end of January. Her nomination and shortlisting reflects her personal effort leading the Women's Network, but also the wider effort of the group in building recognition of the importance of gender balance and diversity.

- ) **Equality, Diversity & Inclusion (EDI):** A significant amount of work has been carried out to raise awareness about EDI across the site and the wider NDA estate. Internal and external data gathering was carried out over the last 12 months to help Dounreay and the NDA identify the key issues which will allow focus to be concentrated on these needs. Initial findings have been shared with the workforce, and EDI is now a regular feature in the site's internal communications and management meeting agendas. It was the standard of the month in September, when Dounreay supported National Inclusion Week. The site also participated in an NDA estate wide data gathering exercise in December with feedback expected shortly.
- ) Representatives from companies including Magnox, Sellafield, Cavendish Nuclear, AECOM, Jacobs and the supply chain visited site this month to help undertake a decommissioning peer assist. They visited different areas of the site to understand what is being done well and identifying potential areas to focus on.
- ) Jacobs has completed its acquisition of CH2M, which is one of the companies that forms Cavendish Dounreay Partnership. The two organisations are now starting a transition process to create a single business known as Jacobs, There will be no impact on day-to-day operations at Dounreay or on any of the individuals currently seconded to Dounreay from the parent body.
- ) The NDA has issued a draft business plan and invite comments from stakeholders.

## APPENDIX 1: PROJECT MILESTONES FOR 2017/18

Area	Milestone	Due Date	Status
Waste	Restart waste operations at D3100 Vaults and D2179 Encapsulation Plant	June 2017	√
Reactors	Loading of first flask with breeder elements	Jul 2017	Completed Aug 17
FCA	DMTR D1251 demolition complete	October 2017	Completed Dec 2017
Reactors	Complete removal of pond east wall liner	December 2017	√
FCA	D1200 ventilation installed and commissioned	Dec 2017	√
FCA	D1204 medium active cell decommissioning preparatory works complete	Dec 2017	√
Reactors	Design, manufacture and trial four tools for reactor dismantling	Jan 2018	√
Waste	DCP operations - PFR raffinate active commissioning complete	Jan 2018	Inactive commissioning completed. Minor issues with the sample transfer system has delayed progress. Expected to be complete by end of February.
FCA	Complete Phase 1 Cell Wall removal in D1217	March 2018	Milestone not expected until October 2018 due to challenges in removal of the final in cell waste packages and unknown asbestos (pipe lagging) discovered in inaccessible areas of the wall.

### Key:



On target to deliver  
At risk  
Missed  
Achieved



## 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