

Dounreay Report

Progress report, January 2016

Site Decommissioning Programme

The site continues to focus on delivery of the programme.

Dounreay Improvement Team update

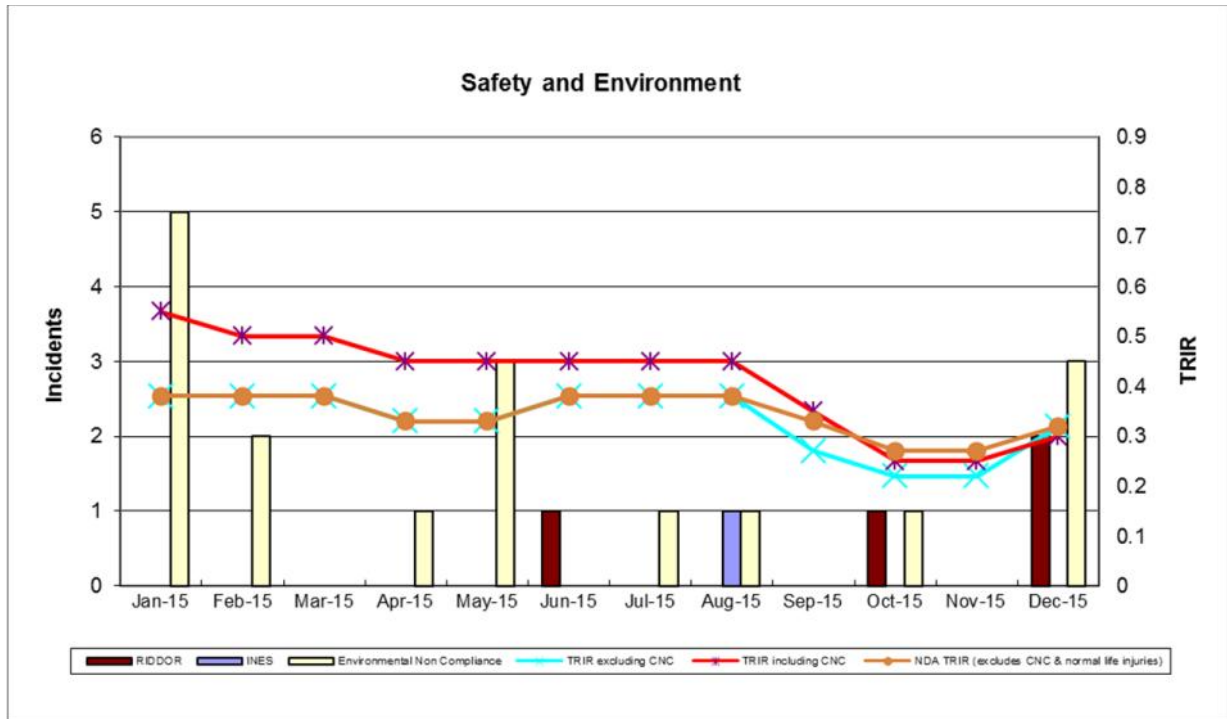
The Dounreay Improvement Team (DIT) continues to address a number of safety and environmental behaviours:

- A key part of DIT's work is to engage with personnel. DIT has continued with team visits during this period.
- An update on the review of Work Control implementation across the site is currently underway. Discussions have been held with individual Work Control Offices on site to determine where there are differences in implementing the procedure. The next step is to bring the teams together to understand why there are differences and identify good practices or areas for improvement.
- The third site decommissioning operative joined DIT in December for a two-week secondment. This gives the team an opportunity to get input from the workforce on current and future DIT initiatives and also to give the operator experience in different areas across site and to share his own experience with other work teams.
- Following the Learning from Experience (LfE) review undertaken an implementation plan has now been produced. The review on accident/investigation process undertaken by LEAN also feeds into this plan. Key areas identified were the resources required to support LfE on site, and ensuring that the investigation process is consistent and completed in a timely manner.
- Conduct of Operations training for supervisors continues to be rolled out across site.

LEAN

The LEAN team is looking at all types of activities and processes across the site with a view to suggesting improvements with workable solutions. These activities are developed in conjunction with DIT to ensure there is a consistency in approach.

- As of end December, the LEAN team had completed five work streams since the start of the project with further potential packages of work being scoped out.
- The implementation of the improvements for the transport of 200 litre waste drums is well under way.
- Implementation of the DMR and Accident/Investigation process improvements are progressing.

Health, Safety, Security and Environmental

Safety

- During December there were two lost time accidents. A member of the civilian guard force tripped injuring themselves and a further guard force member slipped on ice resulting in a fractured wrist.
- As of 12 December 2015, DFR has achieved a 13 year milestone since their last lost time accident (this equates to 4747 days in total).
- A safety pause was instigated in December and concentrated on winter preparedness including winter weather conditions with the potential for an increase in slips, trip and falls. As a follow up a second safety pause was organised for 11th January to refresh these messages following the Christmas and new year holiday.

Environment

- Three environmental non-compliances were reported to SEPA:
 - A weekly sample gave a higher than expected suspended solids results which exceeded the agreed limit. A repeat sample two days later resulted in a compliant result.
 - A weekly sample on 21 December exceeded the upper limit of a pH result with a repeat sample undertaken the following day that was compliant.

- Following inspections of Dounreay's management system and arrangements for the management of solid low level waste SEPA believes that the site is non-compliant with one of the conditions.
- SEPA have requested more information on three RSA conditions from Dounreay to support compliance.
- Discussions with SEPA continue on their decision to refuse the Waste Management Licence Surrender application for Landfill 42. SEPA have indicated a willingness to discuss a reduction in the required monitoring regime and will reconsider some of the current landfill licence conditions. Based on the information provided by SEPA, Dounreay will develop a forward strategy for managing the landfill in conjunction with SEPA.

Security

- The first of three Ballistically Protected Vehicles has been delivered to site and trials and user training is underway.
- As part of the site's security arrangements enhanced search capabilities will be introduced at the main site entrance.

Quality

- The 2014/15 Nuclear Material Balance for Dounreay was published on the Office for Nuclear Regulation website on 22nd December 2015.

Site Performance

Appendix 1 provides an update of the key project milestones for 2015/16. Specific performance achievements are:

- **Dounreay Fast Reactor (DFR):**
 - DFR has completed removal of NaK from four of the seven NaK hot traps and processing of nine batches of NaK through the NaK Disposal Plant (NDP). This related to about 1.5 tonnes of NaK which has been extracted and processed through DP from the hot traps. The remaining three hot traps will be processed after completing repairs of the two blocked hot trap dip legs. Work is underway to prepare the dip legs for removal and repair.
 - The first set of trials of water-vapour nitrogen treatment for NaK has commenced. The results from this work will be used to underpin the alkali metals processing computer model.
- **Prototype Fast Reactor (PFR):**
 - Following options re-assessment the PFR Tank Farm (Tanks 3 and 4) will be removed manually incorporating a number of enhancements resulting from the tank farm fire including improved containment, and fire detection features.
 - Inactive commissioning of the Wet Area Size Reduction Facility (WASRF) including ventilation system tie has now commenced.

- The sodium waste drums resulting from the tank farm fire have now been repackaged.
- The flask transfer of the instrument liner tube from the reactor to the west end mortuary (WEM) has been completed. This is the first component to be lowered into the WEM for some years.
- Non-NaK components from Thermal Syphons B and C and NaK-wetted small bore piping from Thermal Syphon B is now complete.
- **Fuel Cycle Area:**
 - D1200: Decommissioning of Lab 96 is now complete with Lab 111 commencing during January.
 - D1204: Installation of new ductwork is now complete and the system is operational. Entry preparations for MA Cell are now underway and preparations for the pond floor gamma survey has commenced.
 - D1206: Repairs have been made to a failed drive shaft in the active filter change cell.
 - D1211: Strip out of the remaining above ground pipework has been completed and preparations for the pit decommissioning has commenced.
 - D1217: Preparations for roof block removal and the first floor mezzanine office strip out are now complete. Phase 2 removal works have commenced.
 - D1251: Decommissioning of a contaminated wall was completed ahead of building demolition. Radiological survey of internal building roof now complete.
 - DMTR: The decommissioning safety case is in progress with graphite samples undergoing analysis. The plant room radiological survey was carried out and the floor removal in the south west mezzanine continues and is 90% complete.
- **Fuels:**
 - Off-site trials and provision of facility contract let and platform manufactured has commenced. Paperwork for the Retrieval Cell mast arrangements are going through internal review.
 - The first transfer of un-irradiated fuel to Sellafield was completed successfully in December. There had been no issues relating to the transportation and a lot of work had been undertaken to co-ordinate the fuel transport.
- **Waste:**
 - Active commissioning of the Encapsulation Plant continues with 86 containers having been grouted to date (as of December 2015). The active commissioning report has now been approved and is currently undergoing review.

- Active commissioning of both vaults (D3100 low level waste facility) continues with 1193 packages of demolished waste and 78 HHISOs have been disposed of. The active commissioning report for the vaults has been written and is currently being reviewed.
- Processing of DFR raffinate from Tank 10 has continued with a total of 165.3 m3 of raffinate successfully processed.
- Trials for a revised formulation for PFR raffinate product continues. Trial works are taking place at Birchwood with AMEC carrying out these inactive trials. To date the reformulation results are adequate and confirm the modifications required to Dounreay Cementation Plant to allow processing of PFR raffinate.
- Active commissioning of the supercompactor is now complete with 2424 pucks having been generated. As from the 7th January WRACS was back in full operation.
- An independent technical assessment of the ADU Floc Immobilisation detail design has been completed and the post closure safety report for the plant has been updated.
- The PFR Effluent Treatment Plant (ETP) is currently out of service due to the discovery of corroded welds throughout the plant pipework.
- Deliverables for the scheme design for Shaft and Silo have been prepared and agreed by the site project team and the contractor.

General

- **Resources:**

	FTE target	FTE Actual/ Forecast
Current – DSRL	1237 (LTP)	1063.7
Current – ASW	N/A	176

In December there were 4 new starts and 2 resignations.

- **Planning:**

- Work continues to develop the Dounreay Planning Framework 3 which covers the site activities from 2018 to interim end state. Engagement activities are expected to take place around late spring/early summer 2016.
- Linked to the development of the Planning Framework is the Environmental Closure and Demolition projects which include a review of the site end state, remediation of the old diffuser and landscaping options for interim end state. The projects are in the process of awarding contracts for technical support and a programme of activities, including stakeholder engagement, will be available in the spring 2016.

- **Contracts**

- Contracts for the Enabling, Crane design and Design/Safety Case for the DCP Store Extension is in progress.
- The technical specifications for the major procurement, manufacturing and installation contracts for the ADU Floc have been prepared and issued for tender.
- The Invitation to Tender (ITT) for review of future ventilation operational requirements for D1200 has been issued and tender assessment has now started.

- **Presentations/visits/events:**

- The NDA hosted a three-day visit from the National Audit Office during December. They visited the new low level waste facility, facilities in the Fuel Cycle Area and the reactors and were provided with presentations from senior managers. The feedback from this visit was very positive.

Dounreay Site Restoration Ltd
12th January 2016

PROJECT MILESTONES FOR 2015/16

Directorate	Milestone	Target completion date.	Progress
Technical	Initiate phase 3 planning application (2018 to Interim End State) by formal submission of development proposals to Highland Council.	30-Jun-2015	✓
Fuel Cycle Area	D1211 – peripheral pipework strip out complete.	31-Oct-2015	✓
Dounreay Improvement Team	Complete production of the revised MAN2004 Conduct of Operations Manual	30-Nov-2015	✓
Support	Nuclear Baseline approval by DSRL Safety Working Party.	31-Dec-2015	✓
Shaft & Silo	PSR endorsed	31-Dec-2015	✓
Shaft & Silo	UPP strip out complete.	31-Dec-2015	Due to change of programme priority focus an alternative milestone under consideration.
Fuels	Award Contract for the Irradiated Flask	31-Dec-2015	✓
Technical	Develop current Business Critical Asset Care Plans to the next system or equipment level down.	31-Jan-2016	
Fuels	Complete Mezzanine Construction to DSRL hold point.	31-Jan-2016	
Security	Implementation of an integrated explosive search capability to the satisfaction of ONR (CNS).	31-Mar-2016	
Security	Information Assurance Maturity Model Level 3 achieved.	31-Mar-2016	
Support	Complete 10 Lean Events which demonstrate they have met the success criteria.	31-Mar-2016	
Fuel Cycle Area	DMTR – Mezzanine Floor removal complete	31-Mar-2016	
Dounreay Improvement Team	Complete 50% of front-line Supervisors development against revised SERP and CDD.	31-Mar-2016	
Waste	Process 100 m3 of DFR raffinate through DCP	31-Mar-2016	
Waste	Process current arisings, plus the 3500 drums of the backlog of LLW drums through WRACS	31-Mar-2016	
Reactors	Commission DFR pond wall cutting equipment and initiative pond wall cutting.	31-Mar-2016	
Reactors	Commission PFR Decontamination Vessel and process the first component.	31-Mar-2016	
Assurance	Achieve 100% completion of Assurance elements of Internal Audit Plan for 2015/2016.	31-Mar-2016	
Assurance	90% of Action Review Meetings to be held within 5 working days of the Investigation Report being issued to Assurance.	31-Mar-2016	

GLOSSARY

Abbreviation	
DACR	Days Away Case Rate
DCP	Dounreay Cementation Plant
DFR	Dounreay Fast reactor
DIT	Dounreay Improvement Team
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
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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