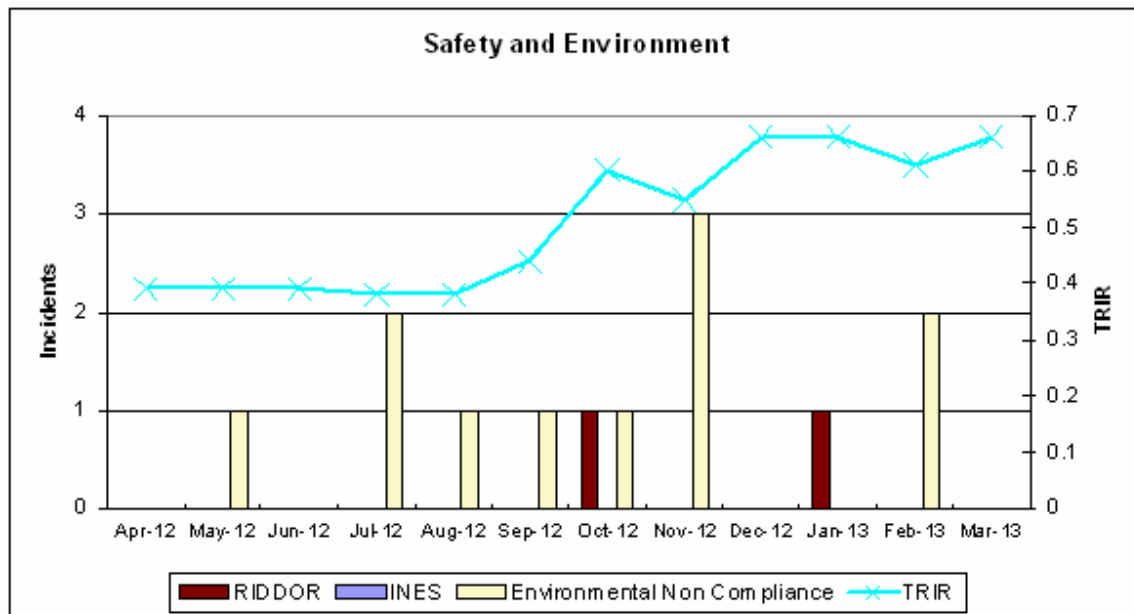


# Dounreay Report

## Progress report up to 30<sup>th</sup> March 2013

### Health, Safety, Security and Environmental Performance



- There were no RIDDOR reportable incidents in February and March 2013.
- Two new injuries were reported during March:
  - a contractor strained their shoulder while changing a wheel off site, there was no lost time.
  - a contractor at PFR whilst climbing stairs misses the stair tread and stumbled resulting in a jarred shoulder.
- As a result, the DACR and TRIR for the rolling year have improved (DACR 0.55 and TRIR 0.66 respectively).
- DSRL has been assessed by SEPA for 2012 under the RSA Compliance Assessment Scheme and rated as excellent for gaseous and solid authorisations, and good for the liquid authorisation.
- The Traffic Safety Challenge was reset on 8<sup>th</sup> April due to traffic breaches. The Challenge continues.

- The highest radiation doses for DSRL and Contractor personnel up to the end of February 2013 (latest available reported figures) were 0.27 mSv and 0.32 mSv respectively, which are in line with the expectations.
- DSRL has been awarded the British Safety Council International award for 2013 with a Merit.
- The Annual Review of Safety and Dounreay Regulatory forum took place in March. The Chief Inspector's report on Dounreay was favourable.

## **General**

- Mark Rouse took over as Dounreay's new managing director on 2<sup>nd</sup> April 2013. He spent his first week carrying out staff talks and meeting a number of project staff. Roger Hardy returns to Babcock's nuclear business in London where he is managing director. He retains his role supporting the regeneration of the local economy and becomes board chair of DSRL.
- A site emergency exercise will take place towards the end of April.
- The Dounreay Socio Economic Plan for 2013-2016 has now been submitted to the NDA.
- The Dounreay Socio Economic Annual Report for 2012-2013 has been submitted to the NDA.
- The NDA has now published its Business Plan for 2013-16. For Dounreay current key milestones include:
  - 2014: Low Level Waste facilities commence operations
  - 2017: Dounreay Fast Reactor (DFR) all liquid metal residues destroyed.
  - 2018: Prototype Fast Reactor (PFR) Liquid metal residues destroyed.
  - 2020: All material for disposal removed from shaft.
  - 2021: PFR dismantled
  - 2022-2025: Interim end state achieved in this timeframe.

## **Reactors**

### **Dounreay Fast Reactor (DFR)**

- The Reactor inspection is now complete. Initial inspections showed mechanical damage as well as swollen and split fuel elements. Dose rate surveys have been completed of the core internals which show radiation levels below expected values. Trial lifts of fuel elements were completed and various options are being evaluated on ways to remove the damaged fuel elements.
- Work continues on the physical installation of the NaK Optimisation equipment. The work is four weeks behind schedule due to issues controlling the Reactors Gas Blanket pressure and removal of lead shielding. While this activity is driving the in-reactor commissioning of

the Retrieval Facility for fuels it does not impact on the critical path.

### **Prototype Fast Reactor (PFR)**

- PFR sodium treatment is currently behind schedule. A recovery plan is now in place which is expected to potentially shorten the overall schedule. No impact on the critical path.
- Preparations for Primary Storage Tank 3 are complete and ready to receive material. Preparations continue in Primary Storage Tanks 1 and 2. Movement of fuel from Irradiated Fuel Buffer Store (IFBS) to the Irradiated Fuel Cave (IFC) is expected shortly.
- The Secondary Sodium pipework, sodium dump tanks and associated sodium have now all been removed. This involved the removal and disposition of three 20 metre tall vent stacks and 40 tonnes of sodium contaminated large bore pipe from the steam generator building at PFR.

### **Fuel Cycle Area Decommissioning**

- **D1217:** the characterisation survey of the south cell is now complete. Work continues to allow demonstration to the regulators that the first cell can be disposed of as bulk waste and will inform the bulk waste strategy for the site. This continues to be subject to Regulatory approval.
- **D1206:** the data from the first phase of cell characterisation is being reviewed and areas of targeted ILW removed are being identified. The Pulse Generator units (which served the solvent extraction cells in the facility) have been decommissioned and disposed of.
- **D1204:** the pond clean-up unit is being prepared for installation.
- **D1251:** the Post Irradiation Examination Cave (PIE) has been decontaminated and the area has now been declassified. This work supports the achievement of having the D1251 complex ready for demolition.
- **D1208:** the transfer of MTR raffinate was completed which met the year target of 100 m<sup>3</sup> throughput.

### **Shaft/Silo Decommissioning**

- The scheme design for the shaft is now started with a forecast date of November 2013.
- The preliminary safety case (PSC) for the shaft is now complete and approved internally on 26<sup>th</sup> March. It has now been forwarded to ONR.

### **Waste and Fuels**

- To date, five shipments of fast reactor breeder material was delivered safely to Sellafield.
- Low Level Waste: Erection of the structural steel and roof cladding in the Demolition LLW Vault started on 6<sup>th</sup> February 2013 and is now 79% complete. The forecast date for

steelwork completion in the Demolition LLW Vault is 25<sup>th</sup> April 2013. Erection of the structural steel and roof cladding in the LLW Vault started on 26 February 2013 and is now 43% complete. It is estimated that completion of the steelwork will be 17 May 2013.

The position of the 3<sup>rd</sup> low level waste vault has been identified. Work continues on the timescale for the excavation of this vault.

- The fourth shipment of waste was returned to Belgium in February 2013.
- **All Waste BPEO:** A review has been undertaken to identify best practice techniques, both nationally and internationally, for the minimisation of waste disposal. The results have been compared with the current and planned waste management strategies at Dounreay. The Dounreay waste management strategies are considered compliant with best practice, and as a result are expected to be Best Practical Environmental Option (BPEO) for the site. The review is an RSA Authorisation requirement that is repeated every 4 years. This review will culminate into a report that identifies changes since the last review (completed in 2009). The report is currently in draft and will undergo its due process prior to submission to SEPA later in the year.
- **WRACS:** Fabrication of additional part/components to connect the new supercompactor to the existing waste feed, electrical and control systems has now commenced. A successful 'factory acceptance test' of the control system for the new supercompactor was undertaken and work now focuses on preparations and implementation for the foundations of the new supercompactor.

### **Environmental Restoration**

- **Discharge authorisation:** DSRL is preparing additional information that SEPA has requested in support of the new RSA Authorisation application and information that the European Commission has requested in relation to the Article 37 update.
- **Particles:** DSLR have submitted to SEPA the forward strategy for particles management. The strategy reflects the successful outcomes of the off-shore particles remediation whilst recognising the status of the pending issue of the new RSA authorisation and PRAG(D) report that will further define the work to implement the strategy.

Nuvia, on behalf of DRSL, recently tested a modification to the particle detection equipment to assess the capability to detect a beta-rich particle such as the one recovered from Sandside beach in February 2012. The test was conducted at Dunnet beach. The results of the test confirm that existing equipment is capable of detecting this type of particle and demonstrate that the modified equipment provides a small improvement in beta detection efficiency. DSRL have undertaken to implement the modifications to Nuvia's beach monitoring vehicles at Dounreay. DSRL expect to deploy the modified equipment on Caithness beaches within a couple of months.

- **Liquid Effluent Discharge system:** Options for the decommissioning of the entire liquid effluent discharge system are currently being considered. A draft Environmental Safety Strategy is in preparation and future updates will be provided on the development of a short-list of options and the options assessment process.

**Staffing**

	<b>FTE Target</b>	<b>FTE Actual /Forecast</b>
Current	939*	905 **
YE Outturn	939	905 **

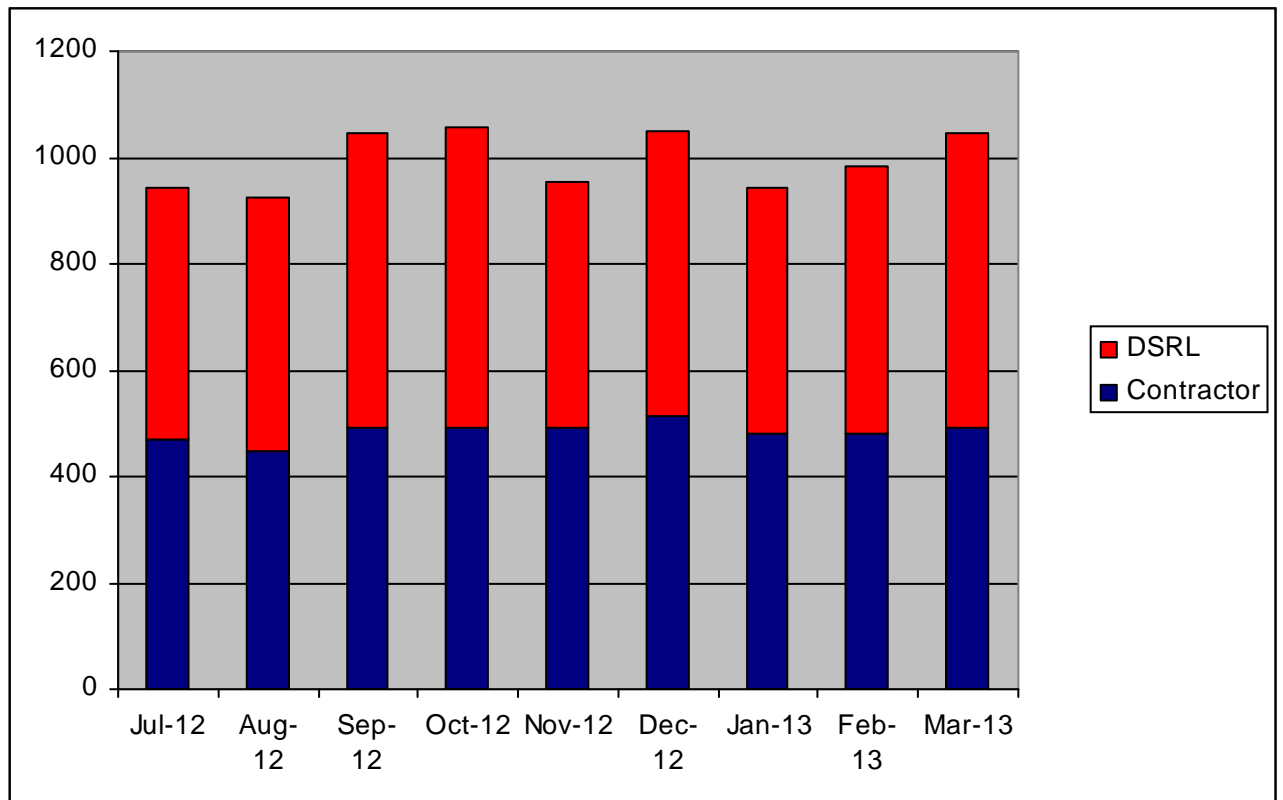
\* target includes 854 employees and 85 agency staff

\*\* includes actual 791 for employees and 114 for agency staff

During March 2013 there were

- 1 new start
- 2 resignations
- 0 dismissal
- 14 VER
- 0 Retirement
- 1 Death in Service

**DSRL/Contractor site access data**



Note that the DSRL staff numbers are lower than the FTE data because on any given day there are certain groups of staff not on site, for example – long term sick, maternity leave, those working off site (Dounreay.com) etc.

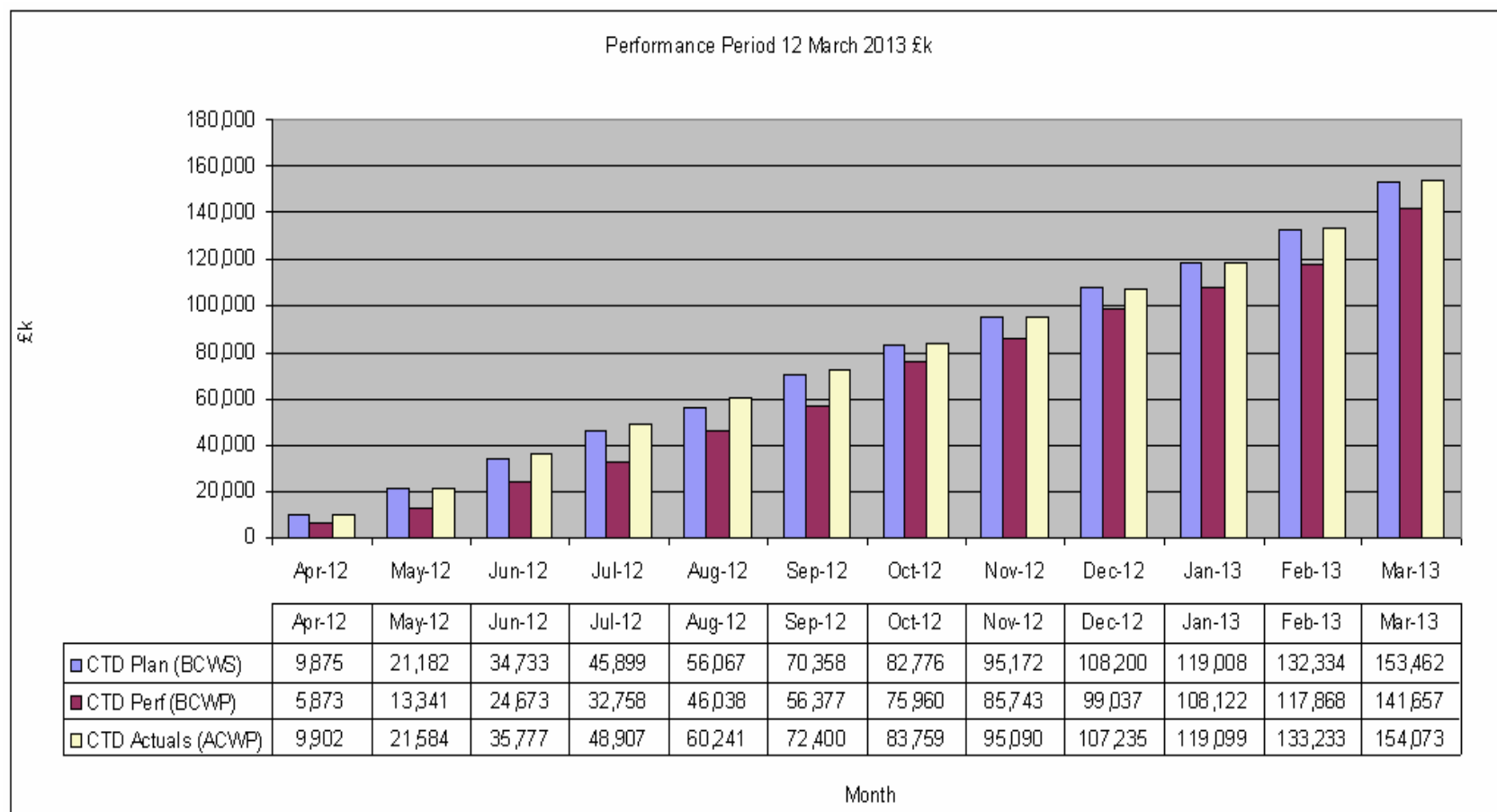
### **Procurement update**

- The Unirradiated Fuel Characterisation Facility (UFCF) procurement has commenced with orders placed for the intermediate can welder, the outer can welder and 7 laboratory instruments.
- **Shaft/Silo decommissioning:** Contracts have been awarded for the Fissile & Gamma Systems, the Retrieval & Process Crane and the design and build of remotely operated vehicles. In addition the Shaft Intervention Platform Concept Design has been issued to three vendors in parallel.

### **CNC Firing Range**

- The planning application has been submitted to Highland Council and can be viewed on the Highland Council website. Updates will continue as this project progresses.

Dounreay Site Restoration Ltd  
8<sup>th</sup> April 2013



**GLOSSARY**

<b>Abbreviation</b>	
DACR	Days Away Case Rate
DCP	Dounreay Cementation Plant
DSRL	Dounreay Site Restoration Ltd
EIA	Environmental Impact Assessment
ES	Environmental Statement
IFBS	Irradiated Fuel Buffer Store
IFC	Irradiated Fuel Cave
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
PFR	Prototype Fast Reactor
PSR	Preliminary Safety Report
RIDDOR	Reporting of injuries, Diseases & Dangerous Occurrences Regulations.
RSA	Radioactive Substances Act
SEPA	Scottish Environment Protection Agency
SID	Sodium Inventory Destruction Plant
TRIR	Total Recordable Incident Rate