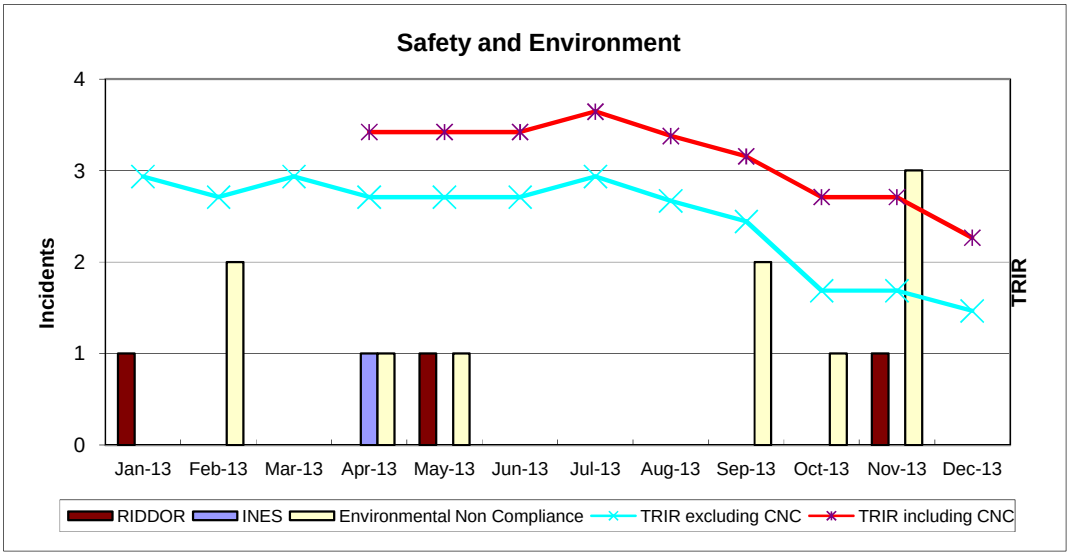
Dounreay Report
Progress report up to end December 2013

Health, Safety, Security and Environmental Performance



- There was one RIDDOR reportable Specified Injury in November 2013. Whilst reversing, the driver of a 4x4 believed his colleague was walking on the footpath and did not see him; unfortunately he hit his colleague who fell to the ground. The pedestrian has been diagnosed with a broken arm which is a "Specified Injury" (Event). An investigation was conducted and it was identified that the work area needed modification to make parking and vehicle access in this area safer.

- There was one INF1 (Incident Notification Form) notified to ONR during December 2013. A storm with lightning and winds in excess of 80mph affected the site resulting in the closure of the site to non-essential personnel. The INF1 was raised as a result of the widespread failures of the fire alarm systems and some telephone lines to the fire station and Dounreay Emergency Control Centre. The resulting evacuation was a positive demonstration of the emergency control procedures and processes and a lesson learned has been completed.

- There was one TRIR injury during October relating to a CNC employee being bitten by a dog. Medication was prescribed making this a Medical Treatment case. A further TRIR occurred in December when a contractor hit his head on a duct and required stitches.

General

At the close of Period 21 (December 2013), the Project has an overall schedule performance index of 0.94 and a cost performance index of 0.93.

There have been six Category 0 Baseline Changes incorporated into the Baseline this month, but £9,201k has been expended on changes which are currently being progressed. When the 'in progress' changes are taken into account, the schedule performance index improves to 0.99 and the cost performance index improves to 1.12. Overall project completion is 16%.

As outlined at the DSG in December 2013 work is ongoing to reprofile the lifetime plan. An assessment has been conducted of the overall baseline to bring the plan within the annual site funding limit for the life of the programme. Since contract initiation, over £193 million of additional work was added to the plan in the first 4 years.

A number of scenarios were developed to determine the best approach for re-baselining to make the programme affordable. Seven progressive scenarios were developed and a detailed scheduled is being put together for the selected scenario, which prioritises the critical path, fuels and security efforts. The revised plan will significantly increase the risk on the overall programme and additional work is needed to quantify that risk, and the strategies that will be used to achieve the interim end date. This work is likely to be complete around May 2014. As reported at DSG, there is no change to the interim end state. The work being undertaken is to ensure that the funding profile and programme schedule is consistent and the work is executable.

Structures Formerly Known as Reactors (SFKaRs)

The Reactors recovery plan has been implemented, and the overall performance has improved with the implementation of a baseline change to re-sequence the activities and address the additional cost for design efforts. The execution year to date has the Project ahead of schedule (SPI[1] 1.19) and in a positive cost position (CPI[2] 1.06). The cumulative to date position shows the Project on schedule (SPI 1.00) and in a negative cost position (CPI 0.89). The cost is due to the additional efforts required for the NaK optimisation programme. The fiscal year end cumulative projection is that the project will be on schedule and have achieved a slight improvement on CPI.

Dounreay Fast Reactor (DFR)

- A way forward for the removal of the stuck fuel has now been developed and implementation of the fuel retrieval strategy is now underway. All required fuel elements have now been marked.

- Concrete cutting trials for the DFR Pond walls have been completed at the manufacturer's premises. This work is carried out semi-remotely. Technical issues identified have been resolved and the equipment has been trialled successfully in the locality. Training for operators was also carried out during the trials.

- Strip out of the control room has commenced.

Prototype Fast Reactor (PFR)

- Strip out of ventilation system redundant fans is now complete.

- Fabrication of the superheated steam skid continues.

- Work has commenced on crane brake assembles. These have now been reconditioned and returned to site in December for installation.

- Decommissioning of the PFR Thermal Syphon A ductwork was successfully decommissioned and removed via the authorised waste route.

[1] SPI is schedule performance index and is a ratio of the Budgeted Cost of Work Scheduled (what you said you were going to do) and Budgeted Cost of Work Performed (what you did). Numbers larger than 1.00 indicate that the project is ahead of schedule; numbers less than 1.00 indicate that the project is behind schedule.

[2] CPI is cost performance index and is a ratio of the Budgeted Cost of Work Performed (what you did) and the Actual Cost of Work Performed (what it cost you to do the work). A CPI of 1.00 indicates that £1.00 of work has been complete for £1.00. Numbers larger than 1.00 indicate that more work has been done for less money than planned.

- Operation of the Sodium Inventory Destruction (SID) plant continues with 83 batches processed.

- Initial investigation of the PFR Argon Gas Blanket vaults has shown them to be in good condition. This is the first time the vaults have been entered since they were installed.

Fuel Cycle Area Decommissioning

The Fuel Cycle Area execution year to date has the Project slightly behind schedule (SPI 0.98) and in a negative cost position (CPI 0.76). The cumulative to date position shows the Project slightly behind (SPI 0.99) and in a negative cost position (CPI 0.86). The fiscal year end cumulative projection is that the project schedule performance will not change and have achieved a continued degradation of CPI. The cost impacts are primarily associated with maintenance costs, but utilities costs and health surveyor costs have also contributed to the current status. The project will evaluate the preparation of a baseline change to drawdown contingency to address some of the shortfall.

- **D1206:** Remote visual and radiological surveys of the High Active Cell Extension and Dissolver Cell 4 are now complete. This completes the characterisation surveys of all of the shielded cells. RHILW removal from the breakdown cave continued and the removal of legacy core cave manipulators commenced in preparation for core cave post operational clean out (POCO).
- **D1211:** Construction of cover building is now complete as is the off-site fabrication of the ventilation plant. Testing of the ventilation plant is in progress.
- **D1204:** Pond clean-up unit installation is now ready for installation.
- **D2670:** Inactive trials and Unirradiated Fuel Characterisation Facility (UFCF) infrastructure modifications are being carried out. The facility hoist has been removed from the Pulse Column Laboratory area and radiological surveys have now commenced.

- Agreement has been reached with SEPA on replacement boreholes.
- Soil Engineering mobilised and borehole drilling is complete.
- The electrical diversion to the UPP is in progress.
- Removal of the low active drain is likely to commence in January 2014.
- Trials at Janetstown has substantiated the additional use of a grit classifer and rotating sieve. This information is now being incorporated into the scheme design for sludge/liquid retrieval and processing.

Waste and Fuels

The Waste project performance for execution year to date has the Project behind schedule (SPI 0.82) and in a negative cost position (CPI 0.84). The cumulative to date position shows the Project behind schedule (SPI 0.92) and in a negative cost position (CPI 0.85). The fiscal year end cumulative projection is that the project schedule and cost performance will degrade; however this project has several baseline change proposals associated with security in preparation where some of the scope is currently being executed, but the scope is not in the plan. As the baseline changes are implemented, the cost and schedule performance will improve.

The Fuels project performance for execution year to date has the Project slightly behind schedule (SPI 0.95) and in a positive cost position (CPI 1.09). The cumulative to date position shows the Project behind schedule (SPI 0.89) and in a positive cost position (CPI 1.06). The fiscal year end cumulative projection is that the project schedule performance will degrade and the CPI will stay positive; however this project has several baseline change proposal in preparation where some of the scope is currently being executed, but the scope is not in the plan. As the baseline changes are implemented, the cost and schedule performance will improve.

- To date, twelve shipments of fast reactor breeder material have been delivered safely to Sellafield and seven shipments of waste have been returned to Belgium.
- **Dounreay Cementation Plant:** Immobilisation of MTR raffinate is now complete, four months ahead of schedule. Work is also complete on the detailed design for the modified DCP transfer pot system and is now being manufactured.
- **Low Level Waste:** Concrete works have been completed on access ramps for both vaults. Installation of the flood barrier is also complete and has been successfully tested. The main access road preparation is complete and is now ready for surfacing. Physical installation of lights and other electrical services continues. It is expected that contract completion for construction will be completed by the end of January to allow for completion of inactive commissioning.
- **WRACS:** Fabrication of the supercompactor continues. The safety modification documentation is nearing completion to allow for installation and commissioning activities to be completed. The project is on schedule to carry out inactive commissioning of the new unit at the end of March 2014.
- **Waste Containers:** The second two prototype concrete HHISO containers are now on site and have undergone initial testing.
- **CNC Firing Range:** Construction is continuing.

Support

The Support project performance for execution year to date has the Project slightly ahead of schedule (SPI 1.02) and in a negative cost position (CPI 0.96). The cumulative to date position shows the Project slightly behind schedule (SPI 0.96) and in a negative cost position (CPI 0.97). The fiscal year end cumulative projection is that the project will be slightly behind schedule, but in a positive cost position.

- Particles: A briefing note has been provided separately for information.
- Offsite characteristic report has been completed.
- General Site Area Safety Analysis Report was completed and reviewed by the Safety Working Party
- New Site Alert commissioning and performance assessment was completed

Staffing

	FTE Target	**FTE Actual /Forecast**
Current	974.99*	1012.8**
YE Outturn	-	974.99

* target is 974.99 DSRL employees (full time equivalent) (839.99 DSRL / 135 agency workers)
** includes actual 847.8 DSRL (full time equivalent) employees and 163 agency staff

During November/December 2013 there were

- 79.8 new starts
- 6.5 resignations
- 0 dismissals
- 0 voluntary early retirements
- 0.6 Retirement
- 0 death in ser( )12(W)-IR'1153 381.08609 Tm[ )-11(R)-1(46W 767 7i)5(r)-4(e)1(me)1(n)1(t)]TJETQ gq0 11.297789 5

- An Invitation to Tender for the PFR reactor waste packaging facility design and manufacture was issued in December.
- Under the collaboration Procurement, Nuvia has been awarded a contract for radiological protection.
- A professional services framework agreement has been issued as per OJEU rules.

Dounreay Site Restoration Ltd
13th January 2014

GLOSSARY

Abbreviation	
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
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
PFR	Prototype Fast Reactor
PSR	Preliminary Safety Report
RIDDOR	Reporting of injuries, Diseases & Dangerous Occurrences Regulations.....pV354741781 11.297789 333.156648 772.