

12/08 PERFORMANCE



Dounreay Site
Restoration Ltd

Site clean-up performance report for
December 2008

www.dounreay.com

Plasma arc cutting in D1217

A decommissioning team is pioneering the use of remotely-operated plasma-arc industrial cutting tools in a controlled area at Dounreay.

The process is being used in the post irradiation examination facility in Dounreay's fuel cycle area.

The facility contains two large cells, where items were brought for examination after being irradiated in the reactors. The cells contain heavy duty steel benches 22 metres long and 2 metres wide which must be cut up before they can be disposed of as intermediate level waste.

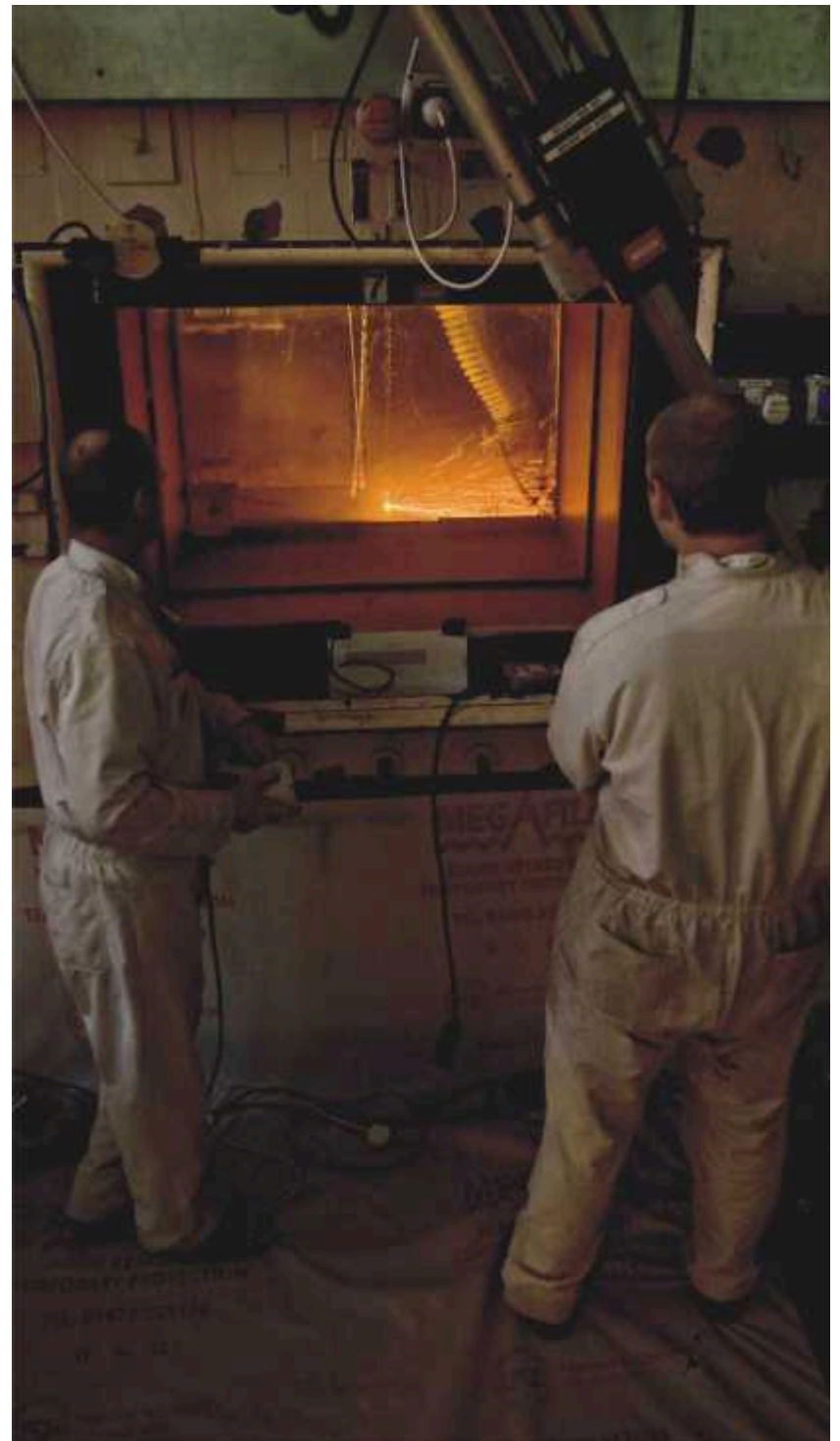
The tool is operated by workers using the in-cell manipulator arms.

DSRL project manager Gordon Tait is impressed by the performance of the plasma-arc cutters.

"We had been using grinders to take the benches apart, but it was very slow going," he explained. "So we tried plasma instead. We had to upgrade the ventilation because it produces gases, but it has made a real difference.

"During inactive trials of the plasma-arc cutters, we found it could slice through the thick steel plates much faster than conventional cutting tools."

The clean up of the cells is due to be completed by 2010.



1 9 4 months until shutdown

PROGRAMME PERFORMANCE REPORT

December 2008

PROGRAMME DELIVERY

Schedule Performance Index (SPI)

Year to-date	Year-end forecast
0.94	0.98

* SPI measures work actually carried out against the agreed NDA schedule.

Cost Performance Index (CPI)

Year to-date	Year-end forecast
1.03	1.03

* CPI measures the cost of work actually carried out against the forecast agreed with the NDA. A figure of 1.0 equals the cost agreed - greater than one reflects efficiency gains.

Performance Based Incentives (PBI)

Year to-date	Year-end maximum forecast for project delivery
£2.18 million	£4.25 million

* PBI are agreed milestones with NDA which result in payment of fee.

PRODUCTION

	December	2008 - 2009
Exempt waste removed from site:	13.4 tonnes	116 tonnes
Low-level waste processed for disposal:	243 drums	3193 drums
Raffinate liquor converted to solid intermediate-level waste:	69 drums	427 drums

HEALTH & SAFETY

Number of reportable radiological events:	0	0
Number of events on International Nuclear Event Scale:	0	0
Average radiation dose (calendar year to date) to DSRL staff:	0.10 mSv	
Maximum individual radiation dose (calendar year to date) to DSRL staff:	1.96 mSv	
Average radiation dose (calendar year to date) to non-DSRL staff:	0.08 mSv	
Maximum individual radiation dose (in calendar year to date) to non-DSRL staff:	2.03 mSv	
Number of Lost Time Accidents:	0	3
Total Recordable Incident Rate: <small>Compares injury and illness rates per 20,000 hours worked</small>	0.21	
RIDDOR reportable occurrences:	0	
Hours worked since last LTA:	500,000	

ENVIRONMENT

Events reported to regulator:	0	0
Radiological discharges as proportion of authorisation:	Reported quarterly on the website	
Amount of paper recycled:	9,300 kg	10,740 kg
Amount of metal recycled:	0 kg	65,500 kg
Amount of cardboard recycled:	2,700 kg	6,180 kg
Particles recovered from local beaches:	0	

PEOPLE

DSRL (full time equivalents):	953.6
Sub-contractors (number of passes held):	1155



A versatile remotely-operated machine that will cut the heart out of Dounreay's fast reactor has been installed in the sphere. The retrieval cell is a highly engineered tool that will reach down inside the reactor vessel and remove the remaining breeder elements.

The mast towers 27ft above the floor of the sphere. It is bolted onto the top of the retrieval cell, which in turn is bolted onto the rotating shields covering the reactor. The cell houses a series of specialist tools purpose built for the removal job.

The tools will be used to remove each 8ft element from the reactor core. Many of the elements are expected to be warped and distorted or swollen, and will have to be cut free before they can be removed.

The retrieval cell and mast were

built in Toulon, France by French nuclear experts Areva, and tested with DSRL engineers in attendance, before being shipped over to Caithness and installed in the sphere.

Retrieving the breeder elements is expected to begin

in 2012, once the bulk liquid metal coolant has been destroyed, and will take an estimated two to three years to complete.

UKAEA donates £2500 to Dounreay Communities Fund for each month without a Lost Time Accident (LTA)



Total = £17,500

DFR

Improvements to the ion exchange plant that forms part of the liquid metal destruction process are on course for completion in February. Subject to regulatory approvals, the improvements will allow active commissioning of the plant to resume.

A large, remotely-operated tool for the removal of breeder from inside the reactor was moved successfully into place.



PFR

The sixth load of items wetted with sodium-potassium liquid metal was cleansed using water vapour nitrogen inside the sodium inventory disposal plant.

A blockage in a transfer line held up the emptying of the sodium tank farm.

Cleaning of liquid metal from components at Janetstown was completed. The facility was placed in care and maintenance.

Eight samples were taken from an irradiated neutron shield rod to support characterisation of the reactor vessel waste.



FUEL CYCLE AREA

Decontamination started of the glass column removed from the Pulsed Column Laboratory. Work started to remove the groundfloor section of the glovebox.

Concrete removal continued in the amber area of the uranium recovery plant, with six plinths now remaining.

The north side control panels on the first floor of the research reactor fuel reprocessing plant were stripped out. Removal of debris from the pond continued.

Clean-out of cell line 1-8 was completed in the D1200 laboratory.

Size reduction started using plasma cutting of the internals in the south side cell of the post-irradiation examination facility.

The contents of the eighth drum of breeder material from DFR were declassified.

Mechanical installation started on the D1209 ventilation replacement.



EXPERIMENTAL CRIT LAB

Major service isolations were concluded in preparation for demolition of the experimental criticality laboratory.

SHAFT

Paperwork preparations continued for water sample of boreholes to determine if chemistry changes in the shaft water can be detected at depth. A "drawdown test" is planned to understand the hydraulic conditions in the shaft.

Mock-up work at Janetstown of the retrieval processing line continued at Janetstown, with modification of the control system.



WASTE MANAGEMENT

A workshop was held as part of a review of all wastes at Dounreay, leading to the preparation of a consultation document for those wastes where realistic options were identified.

HEALTH, SAFETY & ENVIRONMENT

A minor hand contamination case was dealt with successfully by the occupational health department.

Workers decommissioning the Prototype Fast Reactor notched up four years without a Lost Time Accident.

The latest safety challenge for the site was reset on December 6 when a key safe was found to be unlocked.

Northern Constabulary joined Civil Nuclear Constabulary and the site's security department for a Christmas roadshow, giving personal and road safety information to workers. The site's occupation health department

focussed on cardiac risk factors, smoking cessation, alcohol, diet, exercise, stress and cholesterol.

Dounreay is involved in a benchmarking exercise with other NDA sites in Scotland, covering all aspects of environment management systems and communication with SEPA.

GENERAL

Stephen White, chairman of DSRL, was awarded an OBE in the Queen's New Year Honours.

Senior managers attended the quarterly meeting of Dounreay Stakeholder Group on December 10 to discuss decommissioning progress.

The Nuclear Decommissioning Authority announced on December 8 its competition timetable for DSRL. The successful bidder is due to be announced in late 2010.

Strong winds caused minor damage to property around December 19. The highest recorded speed was 95mph.

