
DOUNREAY UPDATE REPORT
as of 7 April 2020

Introduction by Mark Rouse, Managing Director

I had the pleasure of taking up the role of Managing Director for Dounreay at the end of March. This is my second time in this role and I am delighted to be back working with the site team again and equally looking forward to being part of this fantastic community again.

My return has coincided with the COVID-19 impacts and, as a result, it has not been possible to meet with you in person, but I do look forward to meeting up with old friends and new colleagues in the near future.

As the impacts of COVID-19 started to become clear, we took the decision to reduce operations at the site so that it can be kept in a safe and secure state and ensuring the number of people required on site is kept to a minimum. Our priority has been to achieve it in a controlled, measured and compliant manner. I am enormously proud of all those who have made this happen.

We continue to talk regularly to regulators and other stakeholders to ensure that safety, security and environmental compliance remain our highest priorities. Several hundred staff are now working from home, or at home and available for work. While this is such a different way of working for us, our aim is to keep connected with the team and keep as much of the organisation operating as possible.

We are also preparing longer term plans for the safe return to full site decommissioning activities when the time is right.

This is only part of our response. In the last few days we have signalled our intent to support the community during the coming weeks and months. For years, we have planned for an emergency that relied upon the community coming to our aid. Now we are urgently drawing up and implementing plans to come to the aid of the community in its emergency. Information on the support being provided is detailed within this paper.

Our supply chain also has been getting involved with offers of support and providing practical equipment such as PPE on request. Thank you to everyone involved for doing their bit to help the community.

Please stay safe and look after each other in these unprecedented times.

COVID-19 community support update

We established a small team of people to co-ordinate our support to the community in response to the COVID-19 outbreak. Steve Young, Organisation Excellence Director is leading this with support from David Hubbard and Mick Moore, while the Community Relations team ensures all requests are logged and actioned appropriately. Links into the Highland Council resilience team meetings are in place alongside local resilience teams and a direct link with NHS.

We are acutely aware that while our focus is on our immediate response, we must not lose sight of the future including the socio economic needs for the county. We continue to work with CNSRP with a view to supporting those projects that have the highest likelihood of creating jobs in the longer term.

To date we have received over 80 requests for community support ranging from the provision of portacabins to printing information posters and volunteer ID cards. Supply chain partners

have also offered support and have supported a number of activities. Below is a snapshot of some of the support we have provided:

- Provided £30k towards the North Highland Initiative (NHI) emergency community fund that allows community organisations to apply for funding to continue the good work they are doing already.
- A number of our staff are currently registering to provide volunteering support to those who need shopping / medication deliveries within Caithness and North Sutherland communities.
- Supported the setting up of an NHS assessment centre at Caithness General Hospital, with provision of welfare type services (fridge, kettle, microwave) alongside North Highland College (which provided lockers). A DSRL administrator is currently providing support by developing a rota system for those working in the assessment centre.
- The Caithness Chamber of Commerce extended membership for its members from 12 to 15 months and, as a result, faced a deficit in its funding stream. Dounreay underwrote £10k of its losses to ensure a strong Chamber moving forward and the team is promoting the various business support funds and advice being provided.
- There have been numerous requests for PPE. We agreed that a local NHS co-ordinator would take receipt of all available equipment to ensure the NHS could effectively prioritise its distribution to health related organisations as required. So far we have provided:
 - 1,200 face masks
 - 200 Tyvek suits
 - 1,000 pairs of nitrile gloves
 - Several thousand pairs of gloves
- Three splash guards for medical practice receptions have been made and fitted by Dounreay joiners.
- Our occupational health team is supporting the NHS with mask fit tests.
- 120 bottles were provided to Caithness Chemicals who are making hand sanitizer for the local area and had run out of bottles.
- Gloves and cover shoes have been provided to Post Offices in Wick and Thurso and to the funeral parlours.
- Our graphic designer has designed local information posters and ID volunteer cards – the posters (100) were printed and laminated for displaying all over the county. Around 1,000 ID volunteer cards were designed, printed, laminated and cut for Caithness and we provided the same ID volunteer cards for Sutherland.
- Supply chain companies are also working to support the community and are offering additional support for possible bigger community projects.

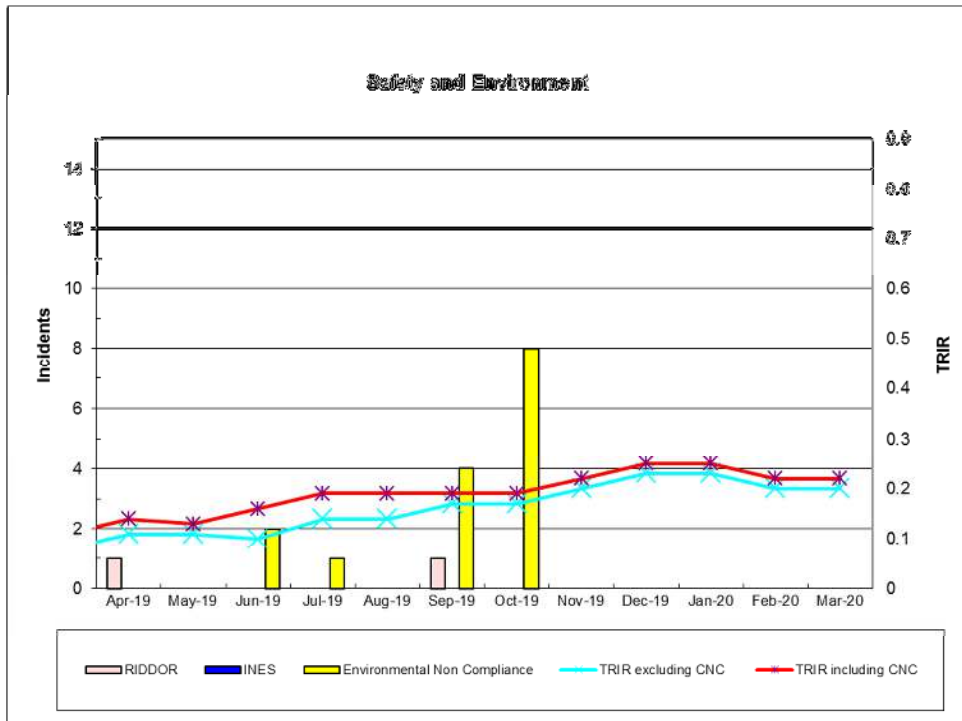
Dounreay decommissioning update

As new working practices have been put in place, there will be an impact on a large number of programme activities. Some work is progressing where it can be undertaken either via remote working, or through small teams on site providing maintenance and shift cover in a controlled manner.

Decommissioning programme

NDA and DSRL continue to work together to agree a joint updated decommissioning programme for the site. This process has continued as outlined at the last Dounreay Stakeholder Group meeting.

Health, Safety, Security and Environment (as at end March 2020)



- The latest total recordable incident rate is 0.20 (March 2020). No RIDDOR events were reported during March.
- The DSRL/ONR Annual Review of Safety and Security was held on 11 March 2020. Positive feedback was received from the regulator.
- As of February, good progress was made to address the steps specified in SEPA’s regulatory notice received last year relating to an FCA ventilation issue in February 2019. There were 15 actions with a target date of 16 January, and 14 out of the 15 have been accepted by SEPA. A response to the remaining action is progressing. Meanwhile work on the remaining 9 actions are progressing with target completion later this year.
- Dounreay is following Government guidance relating to COVID-19. Discussions with regulators are ongoing. SEPA has issued a temporary regulatory position statement that sets out expectations for the Environmental Authorisations (Scotland) Regulations 2018 (EASR) authorisations. DSRL has set out in writing its position and plan to ensure continued compliance.
- During the period January to March 2020 there were an incident related to lifting at the DCP Store extension. During a lift, a banksman inadvertently stood on a crane tag line and was lifted a small distance into the air. The lift was stopped and he was not injured. An Investigation was launched and operations stopped until both DSRL and the contractor were satisfied that it could safely resume.
- On 28 January 2020 in the Low Level Oil and Solvent Waste store, radioactive contaminated liquid was pumped from several polythene Intermediate Bulk Containers (IBC) into 210 litre mild steel approved transport drums. A small leak developed in one of these drums spilling a small quantity of liquid onto the bunded floor of the store. A controlled entry was

made to place absorbent pads onto the bund floor to prevent further spread of the leak and the leaking drum was secured before the remaining liquor was returned from the drum back to its original container. ONR and SEPA were informed of the incident and a Site Investigation was undertaken. The investigation examined all available evidence and concluded that a chemical reaction between a small quantity of acid (not known to be present in the legacy solvent waste) and the steel drum had corroded three small holes in the drum causing the leak. A recommendation from the investigation for additional sampling was made and this confirmed that the issue was isolated to one drum only. Due to the small quantity of liquor spilled the incident was confirmed as not reportable under IRR Regulations and it was also confirmed there had been no breach of conditions under the Site Environmental Regulations permit.

Site decommissioning

Appendix 1 of this report provides information about key project milestones for 2019/20. Recent specific performance achievements are outlined below.

Fuels

Transport of DFR Breeder fuel continued to Sellafield up to end of March.

Reactors

PFR

- The Post Operational Clear Out (POCO) in the Irradiated Fuel Cave (IFC) continued, with size reduction in PIE complete in one station. Additional tooling to allow size reduction is now posted in the cave
- The procurement of electrical control and instrumentation components continues for the Sodium Tank Farm (STF) and manufacture of control panels are nearing completion.
- All active lab gloveboxes from the Alkali Metal Laboratory have now been decommissioned.
- New fan 6 ducting for ventilation is 90% complete.
- The PFR reactor vessel heel pool removal project has completed the inactive commissioning phase. The heel pool pump was placed in a 28 metre purged glovebag before being inserted into the reactor transfer port.



DFR

- The statutory inspection of the Golaith crane and rail was completed and the maintenance of the crane continues as per programme.

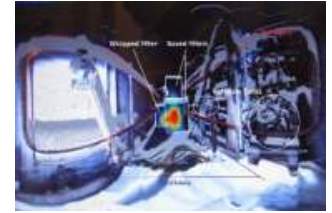
Fuel Cycle Area

- **D1200 labs:** The preparatory works and phase 1 decommissioning for Labs 84 and 103 are complete and phase 2 has commenced, while phase 2 is ongoing in Lab 100. Remote handled intermediate level waste has been moved from Lab 33 to D2001. Ten flask moves were completed in early February. This is the first RHILW to be removed from the lab in six years. Six of the drums contact handleable intermediate level waste have also been packed.
- **D1211:** Brickwork removal in Pit 1 is now complete and the walls and floor now scabbled.



- **D1204:** The electrical design for the overhead crane upgrade continues as well as continued progress on the loading bay hatch manufacture. The removal of structural steelwork and removal of central cell ducting is progressing in the Medium Active Cell area and preparatory work for HAC in-cell laser mapping is now complete.

During work to remove historic Mitchell-cott filters in D1204 high active south cell, a previously unidentified waste package was discovered. It is believed this was historic 4-way valves which were replaced with a new design in the sample and transfer bulges. The best means of characterising and removing this is currently being investigated.



- **D1206:** scaffolding installation is nearing completion.
- **D2001:** Testing of the NDA7 manufacturing continues while the microscope cell decommissioning is now complete. In addition, the removal and installation of the hatch and coring on the carbon bed filter has commenced.

Waste

- WRACs has been operational.
- Routine disposals continue to the new LLW vaults – during this period 8 HHISOs were disposed of.
- The ADU floc project team has erected the steelwork for a new building which will eventually house the floc immobilisation plant.



Construction

- Wall pours have continued for the DCP store extension, with 13 out of the 35 walls complete to date.

The Interim End State Delivery Team

- An unconstrained review of the site end state continues to be developed. DSRL has now had the list of credible options agreed at the Dounreay Nuclear Safety and Environment Committee and at the NDA's Senior Strategy Committee. DSRL are engaging with the market to deliver the preferred option for the Dounreay site following the publication of the new guidance from the environmental regulators(GRR). DSRL are currently going through the tender process for the Site wide options assessment and also for the LLW pits. The next stage will be to apply these credible options to the site's facilities and components, but in a site wide context. This process will be assessed in accordance with the NDA value added framework and strategy management system. DSRL will be inviting DSG representatives to attend assessment workshops to ensure that local views are adequately represented.
- DSRL are producing a Site Wide Environmental Safety Case (SWESC) and Waste Management Plan (WMP) which will justify the safe state of site at Interim End Point. The first issue will be a baseline case assuming no disposal on site. The SWESC and WMP will develop as we remediate site.
- **Particles update:** Four particles have been detected and removed from Dounreay foreshore (3 significant and 1 relevant) and 2 on Sandside Beach (both minor). The last particle found

was reported on 23rd March. Beach monitoring is currently suspended with the last survey taking place during week 23rd March – all of 2020 Quarter 1 beach monitoring was completed. The results from the analysis of the unusual particle have now been completed and the information provided to SEPA.

Socio economics

At this difficult time, there is recognition that some of the conditions linked to drawdown of funding for socio economic projects will be difficult to deliver. A flexible approach will be taken to continue to support these projects into the 2020/21 financial year.

Nuclear Decommissioning Authority (NDA)

- NDA is currently finalising its strategy and is considering any changes to be made in relation to the feedback provided from stakeholders and the support from NDA Corporate and the estate in response to the COVID-19 outbreak.
- Alongside the new strategy, a new process has been developed for the submission of socio economic applications and associated governance arrangements when applications are approved. This has resulted in new application forms being developed and these will be available shortly, once the system has been tested.
- David Wallace has recently been appointed as the NDA's Stakeholder Relations Manager for Scotland. David will represent the organisation across all three of its Scottish sites (Chapelcross, Hunterston A and Dounreay), as well as working closely with the Scottish Government.
- The NDA recently published a brief overview of its socio economic spend during 2018/19.
- NDA continues to progress funding applications for:
 - Wick Harbour Authority
 - Space Hub Sutherland
 - JOG Mill
 - SiMBa tree of tranquillity

Dounreay

- The aims and objectives for the Dounreay Socio Economic Board (involving all three nuclear partners – NDA, PBO and DSRL (known collectively as Dounreay Socio Economic Alliance (DSEA)) have been reviewed and will be implemented this year.
- The Dounreay Socio Economic Impact Plan 2020/21 to 2022/23 has been drafted and submitted to NDA, as per contract, on schedule. This document had been drafted prior to the COVID-19 outbreak and it is therefore recognised that the shape of this plan may change. The draft document will be made available to DSG members and other key stakeholders for comment prior to the plan being finalised.
- A meeting organised by the Dounreay Trade Unions to discuss socio economic topics with Jamie Stone MP and Gail Ross MSP was held in February and a number of actions were agreed with the unions to take forward.
- Shona Kirk (Cavendish Nuclear) has been appointed as project manager to develop proposals for a nuclear services hub (formerly discussed as engineering hub). Steve Young

is leading DSRL's involvement in this work.

- Steve Young, Organisational Excellence Director, with responsibility for Human Resources, Socio Economics and Communications has met with a number of local stakeholders to discuss enhanced partnership working between the DSEA and in turn, CNSRP. Activities are including in the new socio economic impact plan.
- **Socio economic spend:** Reporting of year end finances has not yet been completed and a portion of the underspent funding for 2019/20 has now been allocated to support community activities relating to COVID-19. A year end report will be made available at a later time.

Projects

- DSRL is currently awaiting year end reporting from some of the recipients of socio economic funding. It is appreciated that due to circumstances outwith anyone's control, some of the year end reporting by applicants has been delayed. These will be followed up in the coming months.
- **Caithness Horizons:** High Life Highland was on schedule to re-open the visitor attraction at the beginning of April. This will incur further delay due to COVID-19. Good dialogue has continued between HLH, The Highland Council and Dounreay and discussions are currently underway on a measures for reporting progress. The opening was scheduled following the major elements of works that had been completed by The Highland Council including building fabric, boiler replacement, repairs to heating and ventilation equipment and repairs to Fire Alarms. The facility will be renamed once it is officially re-opened to the public.
- **Battery North:** The Dounreay Socio Economic Board approved the funding of £140k to support North Highland College's bid to establish a Skills development/Research centre to support the development of battery storage technology and the skills to implement and support this development industry. Unfortunately the college's bid for advance manufacturing funding was not successful and therefore the Dounreay funding offer was withdrawn. The North Highland College has submitted a new funding application to CNSRP to set up a net-zero engineering focused research and technology facility to support companies in the Renewable Energy and Battery Technology sectors. The application will go through CNSRP due process before a decision on funding will be made.
- **Wick John O'Groats Airport Public Service Obligation (PSO):** Funding of £40k to support a business case was provided by Dounreay. The business case is now complete and work on a communications strategy was undertaken. Discussions are ongoing with Scottish Government and other key stakeholders and through CNSRP a request has been made for a further £5k to procure consultancy work to support the development of a PSO. The funding has been agreed in principle and a more detailed proposal will be provided prior to funding being released.
- **Caithness/Japanese school project:** The Thurso High School Japanese project continued and a series of events were organised to signal the end of the first of these projects. Unfortunately the events were cancelled at short notice but it is hoped that this will be revisited sometime during this year. The projects which will be included within the STEM activities aims not only to build the connection between the two countries but to provide an educational experience to pupils.

Secondments

- DSRL’s secondment to North Highland College to support the senior phase school project came to an end on 30 March 2020. During this year, the secondee’s support was reduced to one day per week to ensure that the work was handed over for a smooth transition.
- A secondment to support stakeholder engagement for Space Hub Sutherland continues. This secondment is due to cease at the end of March 2021.
- Support for CNSRP continues to be provided by Cavendish Nuclear. This secondee also supported safety and regulatory aspects of the Space Hub Sutherland project.

Commercial

- The second socio economic meeting with the companies who were successful in being placed on the Decommissioning Services Framework Agreement took place in March. Discussions focussed on support for the airport PSO (all companies wrote to Chamber emphasising the need for a reliable air service). Discussion also centred on a potential shared apprenticeship scheme with each company agreeing to provide their thoughts, previous experiences and learning of shared apprentices to help shape a robust business case going forward.
- A Shaft and Silo Advanced Transition Works contract has been awarded to Nuvia Ltd. This is the first package to be awarded through the Decommissioning Services Framework Agreement.
- A mini-competition for the PFR Intermediate Level Waste Size Reduction Facility (ILWSRF) Concept Design has commenced with the Decommissioning Services Framework companies. This is the second competition to go through the Framework.
- DFR Safety Case Engineering Substantiation contract was awarded to Abbott Risk Consulting for £230K under the Safety Case Framework Agreement. This mini-competition was issued to both the Design & Engineering and Safety Case Framework Agreements.
- The Invitation to Tender to support the production of Gate B Paper and associated Site End State review has been published.

Our People

	FTE Target	FTE Actual
Current - DSRL	1,151	1,164.1
Current - ASW		97

During March there was 2 new starts and 1 resignation.

- Two operators from the FCA – Sean Craigie and Shaun Brown – have completed their Decommissioning NVQ.
- The 2019 Gender Pay Gap data was reported on the gov.uk website.



- Human Resource has produced an early careers strategy and this has been submitted to NDA.
- Interviews for apprentice and graduate intakes for 2020 have taken place and 8 apprentices will be offered apprenticeships. The graduate recruitment continues and it is expected that up to 10 graduates may be offered employment at Dounreay.
- Congratulations to the Dounreay Women’s Network and the Women in Nuclear (WiN) Highland Regional branch – winners of the Regional Heroes Award at the annual WiN conference in London at the end of January 2020.
- In early March, Lindsey Anderson was announced the winner of STEM Ambassador of the Year at the Nuclear Skills Awards held in London. Kirsty Mackay was also a finalist in the Business Apprentice of the Year category.



Dounreay Heritage

The Heritage Advisory Panel was due to meet on 21 March 2020 but has been postponed.

- **Collection of heritage objects** continued throughout the year with a further 22 objects provided, including:
 - AEA constabulary pin badge
 - laboratory glassware item made at Dounreay (with coat of arms on side)
 - pocket sized booklet of blank “point of work” safety assessment forms, dated 2003
 - UKAEA house rent cards for 1975,1976 & 1977 (12 Pennyland Drive)
 - 13 items that are for currently sale in Dounreay’s public information office in Thurso
 - commemorative medal given to UK and USA staff involved with the recent Highly Enriched Uranium (HEU) project
 - mini torch given to staff for safety challenge in circa 2014
 - sword of honour for 2011 presented by British Safety Council



- travel mug given to staff in Dec 2019 at safety roadshow
- menu for a DMTR dinner and social evening on 8 Aug 1958. Many signatures are written on the back

- Since 2008 a total of 448 objects have been collected with numerous of these being donated to Caithness Horizons and the National Museum of Scotland. The closure of Caithness Horizons Museum in February 2019 meant that there is no local permanent display of Dounreay objects. Highlife Highland is now responsible for the collections in the museum, which is due to re-open in 2020.
- Nucleus had a temporary display of Dounreay objects that they have acquisitioned. The National Museum of Scotland has Dounreay objects on display in their Energise gallery (on top floor). The museum attracts over two million visitors per year. The V&A Dundee museum includes a model of the sphere in their permanent exhibition. The museum had over 830,000 visitors in its first year.
- The Science Museum intends to put the DFR control room, which was jointly acquisitioned by National Museum of Scotland and the Science Museum London, on public display and has invited tenders to assemble the panels. The museum attracts over 3 million visitors per year.
- **Recording history:** A process to capture the memories of those leaving the site is in place and during the year six forms were completed and returned. In addition DSRL Heritage Officer, James Gunn, gave an interview to the Wick Voices oral history project about Dounreay history. This is available on the Wick Heritage Society's website - <https://www.wickheritage.org/voices.php>
- **Archived records** held on site in the Dounreay archives were successfully transferred to Nucleus in the period January to April 2019. This was circa 22,000 boxes of archive material. The Nucleus request, search and retrieval process has proved to be excellent, with the majority of general record requests being completed within one hour.
- A number of presentations were provided to various groups during the year including the Caithness Family History Society and Halkirk Reminiscence Group.
- Old photographs of Thurso Technical College and Dounreay craft apprentices were donated to the North Highland College, UHI to celebrate their 60th anniversary exhibition on 18th Dec 2019. Old photographs of Thurso auction marts were donated in February 2020, to the auction mart exhibition held at Forss hall in aid of charity.
- Dounreay hosted an international workshop in September 2019 about nuclear cultural heritage with 16 attendees from the UK, France, Germany, Sweden and Lithuania. DSG Chairman Roger Saxon and past Chairman David Flear also attended. Workshops were held in the Pentland hotel and Nucleus and were chaired by a professor from Kingston University, London. James Gunn helped to organise the 3 day event and also gave a guided tour of the former UKAEA housing estates. A position paper on nuclear cultural heritage was issued as the output from the workshops. The international knowledge network and associated workshops are funded by the Arts and Humanities Research Council (AHRC). A final workshop is due to be held in 2020 in London.

- Linda Ross, PhD student at the University of the Highlands and Islands successfully gained her doctorate after nearly 4 years study. The thesis title was; “Nuclear fission and social fusion: the impact of the Dounreay experimental research establishment on the built environment and communities of Caithness, 1954 – 1966.” Linda now works for Historic Environment Scotland.
- The NDA issued a document entitled “Guidelines for safeguarding the UK’s civil nuclear cultural heritage.” A lot of it is based on the Dounreay heritage work and it was written with advice and guidance from numerous national heritage bodies. James Gunn has been appointed as the NDA’s Heritage Officer, initially for a two year period. It will involve a few hours of work per month giving guidance and advice to sites, reviewing documents, plus organising and chairing the NDA Heritage Advisory Panel. It will also involve writing a biennial progress report to be issued to the UK Government via Historic England. The Panel has members representing all civil nuclear sites and numerous national heritage organisations, such as Historic England and the Science Museum. The 1st meeting was due to be held on 1st April, but was postponed. The Panel communicates through a forum on the NDA knowledge hub platform.

Visits

- DSRL hosted a visit from NDA sponsored PhD students where they were given a site tour and presentations from student on research activities on waste management/disposal.



Dounreay Site Restoration Ltd
15 April 2020

APPENDIX 1 – KEY MILESTONES 2019/20

Area	Milestone	Date due	Progress
FCA	D2001 NDA7 scheme design & detailed design stage 1	30-Jun-19	Complete
FCA	D1211 Pit 1 decommissioned stage 1	31-Aug-19	Complete
Construction	DCP store extension, 1st concrete pour stage 1	31-Aug-19	Complete
IES	Installation of 19 Boreholes - phase 1	20-Sep-19	Complete
Fuels	D2001 Irradiated Exotic Fuel disposition concept design completion	10-Oct-19	Complete
IES	Installation of 19 Boreholes - phase 2	25-Oct-19	Complete
FCA	D1200 Lab 101 decommissioned	31-Oct-19	Complete
Waste	Acidification of 1st Batch of ADU Flocc (we have this as Complete Active Commissioning of Phase 1 of ADU Flocc D1208 System Modification)	29-Nov-19 Forecast date: 28-Feb-20	
IES	Installation of 19 Boreholes - phase 3	13-Dec-19	Complete
Construction	DCP store extension, 1st concrete pour stage 2	28-Feb-20	Complete
FCA	D1211 Pit 1 decommissioned stage 2	31-Mar-20	
FCA	D2001 NDA7 scheme design & detailed design stage 2	31-Mar-20	Complete
Reactors	SID - completion of treatment of sodium components and commencement of treatment of tank 2	31-Mar-20	

Key:

	On target to deliver
	At risk
	Missed

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
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