



**QUARTERLY REPORT TO
WEST CUMBRIA SITES STAKEHOLDER GROUP**

1 OCTOBER TO 31 DECEMBER 2010

This report provides a summary of the outcome of our regulatory activities at Sellafield, Windscale, Calder Hall, the Metals Recycling Facility at Lillyhall and the Low-Level Waste Repository (LLWR) near Drigg during October to December 2010.

Our nuclear regulators attend meetings of the WCSSG and most of its sub-committees. We are happy to respond to questions raised there, or you can contact us at our Penrith office:

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We are always looking to improve our reporting and would be happy to hear your views on the format and content of this report.

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EXECUTIVE SUMMARY

This report presents a summary of our work associated with Sellafield, Windscale, Calder Hall, the Metals Recycling Facility at Lillyhall and the Low Level Waste Repository (LLWR) at Drigg from October to the end of to December 2010.

Key points include:

- Beach particle monitoring and multi-agency workshop on monitoring programme.
- Rationalisation of discharge monitoring arrangements at Sellafield.
- Preparing for submission of Low Level Waste Repository environmental safety case.
- Site leak/mitigation strategy.

1 INTRODUCTION

This report presents a summary of our work associated with Sellafield, Windscale, Calder Hall, the Metals Recycling Facility at Lillyhall and the Low Level Waste Repository (LLWR) at Drigg from October to December 2010. The report covers progress against our regulatory strategy which steers our work at nuclear sites. Our strategy sets out among other things;

- Our long term objectives
- Our expectations of the operator
- How our strategy links with the Environment Agency vision and goals

Our role as the Environment Agency

We aim to prevent pollution, to enhance the environment, and contribute to the sustainable development of the UK.

The operation and clean up of nuclear sites generates radioactive and non radioactive waste. Our role as the environmental regulator is to ensure that the management and disposal of those wastes have little or no impact on people and the environment, both now and in the future. We achieve this by both direct regulation and partnership working with, for example, the site operators, the Nuclear Decommissioning Authority (NDA) and the Nuclear Installations Inspectorate (NII).

By working in this way we aim to ensure that the operator is complying with the limits and conditions of the permits that we issue under the Environmental Permitting Regulations 2010 (EPR 10) (this has replaced the Radioactive Substances Act 1993 and the Environmental Permitting Regulations 2007); and that site operators and NDA are taking environmental protection and the reduction of risks to the environment fully into account in their planning and decision making.

If you would like to know more about our role as the regulator on nuclear sites, please go to: www.environment-agency.gov.uk/business/sectors/32517.aspx

2 PERMITS

2.1 Sellafield Ltd's Radioactive Substances EPR Permit Requirements Review

As noted in last quarter's report, we are currently seeking to review and rationalise the permit information requirements, as part of the better regulation regulatory agenda. We have now agreed and finalised with Sellafield the short term proposed changes to the EPR permit information requirements. These changes were effective from 1 January 2011 and will bring about a number of benefits including improvements to groundwater monitoring and removing unnecessary administrative burden.

2.2 Monitoring rationalisation for Sellafield

We have agreed changes to Sellafield Ltd's monitoring arrangements for discharges to air and water. These new changes are now in line with our new joint guidance with the Scottish Environment Protection Agency on standardised reporting of discharges. These changes will ensure that resources to sample and analyse discharges to air and water are targeted at the most significant radionuclides and waste streams.

2.3 Calder Landfill Extension Segregated Area (CLESA)

We have agreed to an extension to operations on the CLESA landfill site and have notified Sellafield Ltd that this will be conditional on them delivering improvements on the next review of the permit. In general, we would like to see more context and justification to continued operations at CLESA around issues of site restoration, the operation and maintenance on engineered defences and measures to ensure the waste hierarchy is properly implemented.

2.4 Application to vary LLW Repository Limited Environmental Permit

In late September 2010, LLW Repository Limited applied for a variation to its permit. The application was to allow the disposal of waste from the site by transfer to other premises for the purposes of treatment or disposal (e.g. incineration, metals treatment, sorting, segregation or disposal at other UK sites). The intent is to enable waste disposal at LLWR to be avoided where possible, thus preserving the capacity for waste that requires the level of containment provided. Additionally, the operators sought to extend the period over which they are permitted to transfer Plutonium Contaminated Materials (PCM) resulting from decommissioning work to Sellafield, out to 2022. This request is designed to allow the final demolition of the PCM Magazines at the point when the materials may be re-used on site for trench or vault capping.

Following consultation and review of all information provided we have decided to vary the permit to allow the disposal of LLW by transfer to other premises and have also decided to allow the transfer of PCM to the Sellafield site until 2022. A varied permit will be issued early in 2011.

2.5 Waste Recycling Limited, Lillyhall Landfill, Environmental Permit Application

Late in 2008, Waste Recycling Limited applied to us to receive and dispose of High Volume-Very Low Level Waste by burial at its Lillyhall Landfill site. During 2009 we consulted upon the application and prepared a draft permit. However, early in 2010 we were informed by DECC that the site must submit an Article 37 submission to the European Union under the Euratom Treaty. This submission was made during the summer and we anticipate a decision being reached on Article 37 by early spring 2011. At this point, based upon the outcome of the submission and any other information available to us, we will complete our determination of the application for a permit under the Environmental Permitting Regulations 2010.

3 DISCHARGES & THEIR RADIOLOGICAL IMPACT

3.1 Radioactive Discharges

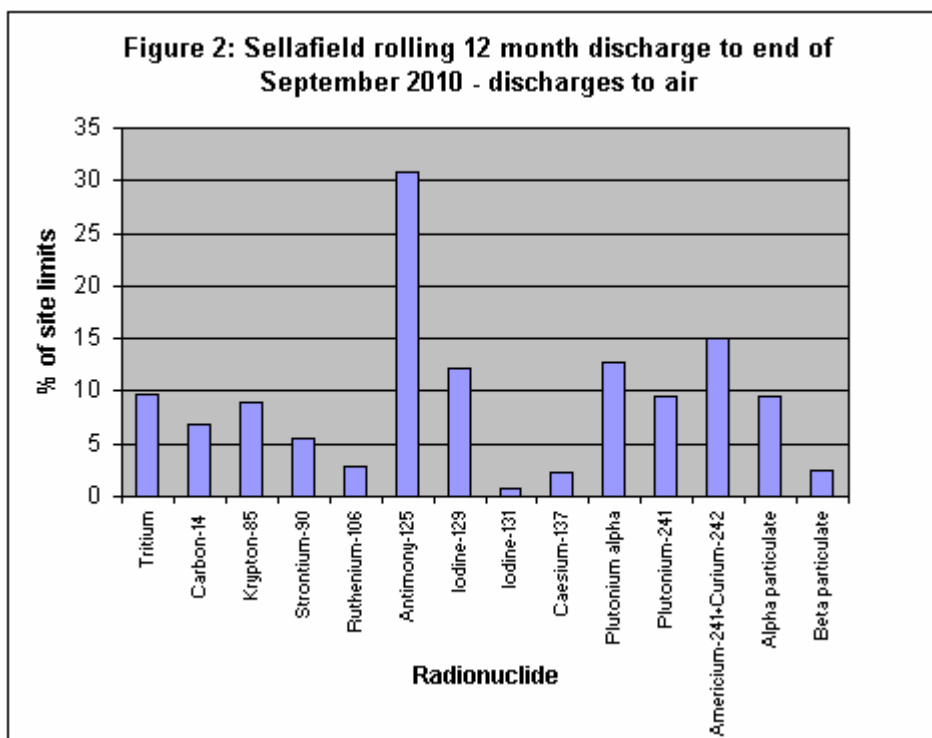
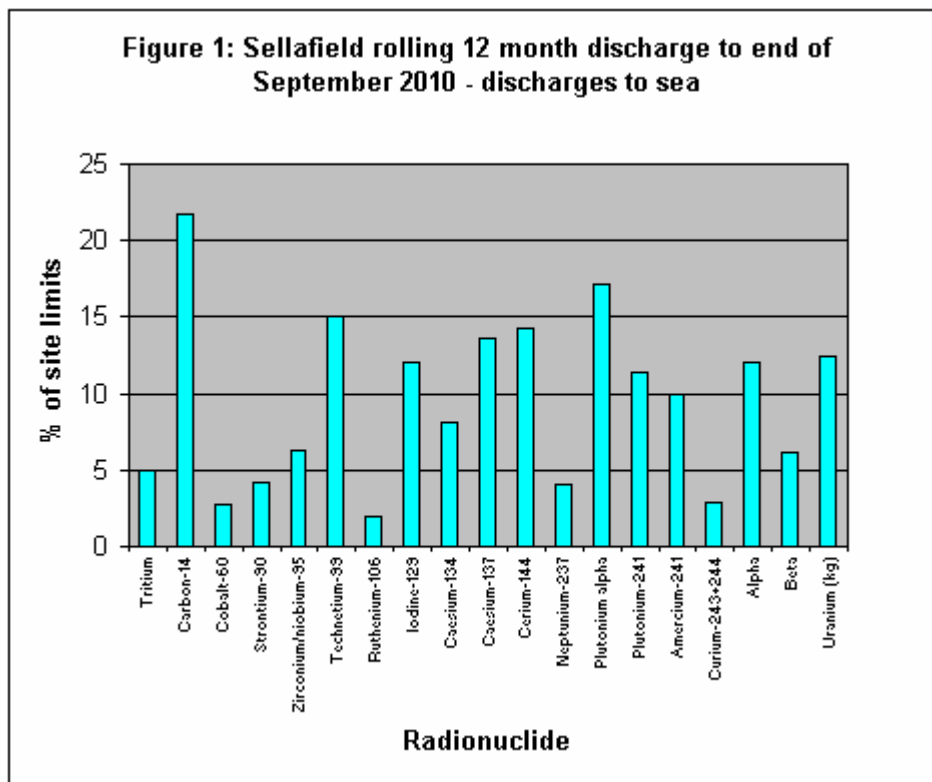
We aim to ensure that the public and the environment are protected from the radiation exposure that may result from the discharge and disposal of radioactive waste.

3.1.1 Discharges to sea

Radioactive discharges to sea from Sellafield over the 12 months to the end of September 2010 are shown as a percentage of the authorised site limits in Figure 1. All discharges were well below the authorised limits.

3.1.2 Discharges to Air

Figure 2 gives the rolling 12 month discharges to air to the end of September 2010 as a percentage of the site limits. All discharges were well below the permitted limits.



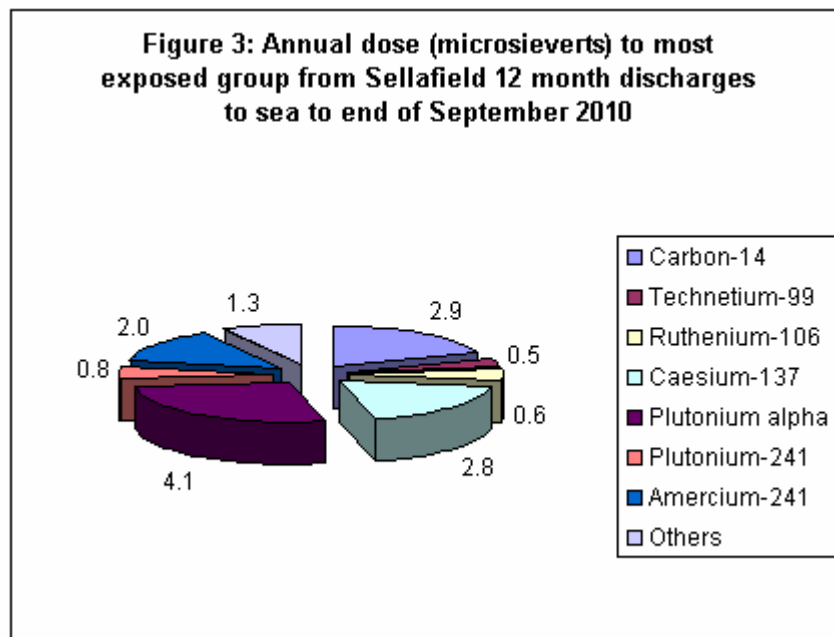
3.1.3 Disposals to Land

These figures are compiled on an annual basis, please refer to the April-June 2010 report for 2009/10 totals.

3.2 Radiation Doses

Radiation doses to the most exposed groups of people from liquid and gaseous discharges from the Sellafield and Windscale sites continue to be well below the statutory public dose limit of 1 millisievert (mSv) per year. For example the assessed annual radiation dose for discharges to sea made during the 12 month period up to the end of September 2010 is

about 15 microsieverts. Figure 3 gives the contributions to this dose from the various radionuclides.



3.3 Environmental Monitoring

3.3.1 Beach particle monitoring

Beach monitoring has continued over the period at Drigg, Sellafield, Braystones and St Bees. Elevated find rates of alpha-rich particles continued at Sellafield as a result of the improved detection capability of the 'Synergy' detector system.

A third multi-agency meeting on Sellafield radioactive particles in the environment was held at Penrith in November. The meeting was well attended by partner organisations, and was successful in stimulating debate on the future direction of the monitoring programme. Of particular note was a presentation by the Health Protection Agency (HPA) on its assessment of risks to the public associated with Sellafield beach particles. The HPA's work concludes that risks to beach users are very low: 4 orders of magnitude lower than the threshold for 'acceptable risk' of $1 \times 10^{-6}/y$ (or 1 in 1 million per year) that the Health & Safety Executive employs. We expect to receive HPA's formal report on the risk assessment, and updated advice in relation to the findings, shortly.

Investigations into the measured uptake of Plutonium in biological samples from beach monitoring workers continue. This issue has attracted questions from COMARE in relation to the potential implications for public exposure. There is no indication of a significant issue in relation to risks to the public, and the most likely cause is considered to be associated with workers' close and relatively frequent interactions with particles as part of their 'detect, assess and remove' remit.

4 COMPLIANCE ASSESSMENT

4.1 Low Level Waste Repository (LLWR)

4.1.1 Environmental Safety Case Review

During this period significant effort has gone into preparing for the review of the updated Environmental Safety Case the operators are due to deliver on 1 May 2011. Through this major submission the operators will aim to demonstrate that past disposals and continued

disposal at the site remain safe now and into the long term future. Once received we anticipate completing review of this submission, including consultation on any resulting permit variation, by around summer 2013. The submission will be made publicly available and we anticipate consulting late 2012 to early 2013, following completion of our detailed technical review of the submission. We have communicated details of our review through the LLW Repository Sub-committee of the WCSSG and will update the committee periodically. Through to delivery in May 2011 we continue to meet regularly with the LLW Repository Environmental Safety Case Team to clarify our expectations of the submission in line with our guidance for assessment for near surface disposal of Low Level Waste. A visit to the site by the Environment Agency's Head of Business Performance and Regulation and a Nuclear Regulatory Group Team Manager is planned to support senior oversight of this important project.

4.1.2 Training Inspection

During December we completed an inspection at LLWR into the adequacy of training provision, in relation to the permit. Overall it was identified that adequate procedures and records were in place. Environmental issues and the permit were clearly recognised within training. There was evidence that individuals and teams felt adequately trained and able to receive necessary training. A minor recommendation was made to instigate regular refresher training for Qualified Experts. We also encouraged ongoing work to introduce more comprehensive environmental awareness training to all staff.

4.1.3 Waste Assurance Strategy

Over this period we have held meetings with LLW Repository Limited to understand progress with the strategy they are developing to provide assurance that waste they receive for disposal is as stated and compliant with their Waste Acceptance Criteria and the permit. Assurance activities have always been undertaken but the operators are currently examining options to undertake checks towards the front end of waste generation (e.g. at the sites generating the waste), where better accuracy can be achieved, rather than once received at LLWR. In parallel we are reviewing our strategy for waste quality checking within the Environment Agency, as our current checking laboratory will be closed by August 2011. We are developing an approach which will similarly involve checking waste closer to the point of generation, rather than 'back-end' checks once waste is packaged and received for disposal.

4.2 Studsvik Metals Recycling Facility, Lillyhall

During October we carried out an inspection of the facility, looking at the identification and maintenance of important environmental equipment. Overall satisfactory procedures, equipment and records were found to be in place and no non-compliances were identified. A number of recommendations for potential improvement were identified that would enable the operators to move closer to use of best practice. These recommendations related to improvements to procedures to better align with permit requirements and to ensure robust identification of environmental equipment and the management of maintenance, including records. A recommendation was also made to enhance the labelling and segregation of wastes.

During December, we carried out a further short inspection and progress meeting. We specifically looked at improvements to waste labelling and segregation following on from the October inspection. Improvements were evident and further work was under way to enhance procedures related to segregation and labelling.

4.3 Sellafeld Ltd

4.3.1 Joint EA/NII follow-up inspection in Plutonium Finishing & Storage (PF&S)

Jointly with NII, we conducted a follow up inspection to a previous joint EA/NII inspection, which focussed on a number of contamination and asset care issues in PF&S earlier in the year. Following from the inspection we noted progress had been made in a number of areas, most notably the HEPA filter change programme, which is now close to completion, and the

evaluation of water ingress into the underground duct system. A number of recommendations were made which jointly NII and ourselves will formally present to Sellafield.

4.3.2 Pile Fuel Storage Pond (PFSP) Export of Metal Fuel

Sellafield Ltd intends to accelerate the transfer of metal fuel out of the PFSP, with a pilot transfer planned to commence in March 2011. We will work closely with NII regarding consideration of the permissioning of this work, recognising it is being given a high priority.

4.3.3 First Generation Magnox Storage Pond (FGMSP) Risk Reduction

Sellafield Ltd continue to pursue projects to improve nuclear containment at the FGMSP facility and to reduce associated risks. We have reviewed their supporting draft environment case in support of two of these projects and plan to witness the final demonstrations of the equipment capability in early 2011, which should help to inform our response to NII regarding the permissioning of the proposed work.

4.3.4 Stores Inventory Retrieval Project (SIRP)

Sellafield Ltd's programme to empty the plutonium residue cans from the stores is proceeding well ahead of plan, and has already achieved its year end target of 500 cans. There remain over 400 cans still to move, but confidence that this work can be completed well ahead of the final expected completion date is high.

4.3.5 Pile Fuel Cladding Silos (PFCS) ventilation system

The recent implementation of the modified Passive Off-Gas System at PFCS is realising significant environmental benefit through the efficient use of argon gas.

4.3.6 Sellafield Ltd Joint NII/EA ILW Solid Waste Management Inspection

This inspection was to have taken place in November 2010. However, due to significant resource pressures from higher priority work and illness this had to be postponed to February 2011.

4.3.7 COMAH inspections

In our role as part of the COMAH Competent Authority (shared with HSE's Hazardous Installations Division) we inspected the Fellside Combined Heat and Power Plant to assess the adequacy of px Ltd's arrangements for controlling the stocks of distillate fuel oil stored at Fellside CHPP. In general, the arrangements appeared to be appropriate for inventory control. However, we made recommendations in relation to providing more defence in depth against over-filling.

We also inspected the inactive tank farm with HSE HID. We have requested that Sellafield Ltd provide us with information regarding the condition of the drainage network (secondary containment) from the chemical lay-down point to the sumps and neutralising pits. There is some evidence to suggest that the integrity of the pipework may be compromised in this part of the plant. If this is the case then we have requested that Sellafield Ltd place all of their stored drums and Intermediate Bulk Containers into temporary bunding, until such time as the secondary containment (drainage system) is repaired.

4.3.8 FGMSP Solid waste inspection

A follow-up inspection recognised that good progress has been made in addressing the issues associated with the storage of waste in external areas which were raised through our February 2010 inspection. We will continue to monitor improvements in this area.

4.3.9 Separation Area Ventilation (SAV) Project

We continue to support the SAV project which will divert gaseous discharges from ageing stacks so that they can be demolished. Good progress is being made at the construction site

and it is expected that the construction of the new stack will commence in January 2011. This will result in a visible change to the Sellafield skyline.

4.3.10 Internal Ventilation System Condensate Drainage Arrangements inspection

As part of our follow up of the condensate leak event on the Magnox Reprocessing ventilation system from January 2009 and the associated Enforcement Notice, we have undertaken a sampling inspection of the LP&S internal ventilation system condensate drainage arrangements. In summary this generally found good awareness on plant with respect to the maintenance and inspection of ventilation condensate drains and more generally the need to ensure integrity of the ventilation systems and that penetrations are sealed. However, the inspection raised a number general and installation specific issues which SL will need to be considered and addressed appropriately.

4.3.11 Nuclear Safety at the MSSS facility

Following a number of nuclear safety events at the MSSS facility in the Summer of 2010, NII issued an improvement notice on SL in October 2010. One of these events was associated with the maintenance of gaseous waste abatement equipment. We are seeking to ensure that SL's improvement plan addresses issues raised respect with to compliance with the EPR10(RSA) permit.

5 INCIDENTS & EVENTS

5.1 Disposal of Low Level Waste (LLW) to Lillyhall Landfill Site

As noted in last quarter's report Sellafield Ltd mis-consigned and disposed of a small volume of LLW from the Sellafield site to the Lillyhall landfill site, Workington in April 2010. We have been investigating this incident with the Department for Transport (DfT). DfT has issued an improvement notice on the quality management arrangements for consigning exempt waste from the site. Sellafield Ltd has a programme to address the DfT improvement notice and shortcomings it has identified in the consignment of exempt waste. Currently, further disposals of exempt waste are embargoed until this programme of work is complete.

5.2 Partial Roof collapse

There was a partial roof collapse of a roof in redundant buildings which were involved in PCM storage, but we understand that no environmental consequences resulted. A recommendation in our joint EA/NII PCM waste inspection earlier this year was to prompt demolition of the building complex should be pursued. SL has secured funding to demolish the buildings.

5.3 Inactive Tank Farm & Nitrate Groundwater Event

Sellafield Ltd has issued a report of work to reduce the higher than normal concentrations of nitrates in the groundwater and its continued plans to identify the source of these nitrates. It also includes a review of plant design and operational practice associated with potential sources of nitric acid, such as off-loading and transfer, and outlines maintenance proposals for drains, pumps and pipework.

5.4 Low Level Waste under-reporting

In June 2010, 69 consignments were under declared on activity due to the failure to implement up to date waste stream characterisation documents. The corrected data for this consignment shows the LLW limits were not breached.

5.5 Pile Fuel Storage Pond (PFSP)

Two skip handler buffers (used to stop the skip handler moving beyond engineered control points) each containing oil and pressurised nitrogen had been found in the LLW route skip at the PFSP facility. Further investigation by Sellafield has established that no skip buffers have left the site in the LLW route. Based on the available information we do not consider

that this event breached permit conditions. However, we do consider that this represents a near miss and are seeking to ensure that Sellafield Ltd addresses the learning from this event.

6 ENFORCEMENT

6.1 Vessel vent condensate leak

We have written to Sellafield Ltd to accept its proposals for remediating the area affected by the condensate leak in January 2009.

We have also been provided with a copy of Sellafield's investigation report into the condensate leaks that were identified in January 2010. The lessons learnt have since been incorporated into the company's responses to the vessel vent condensate leak (July 2009) Enforcement Notice requirements. Sellafield Ltd has also provided us with a copy of the full work programme following our mini-team inspection of the condensate drain system in June this year.

6.2 Sea Line 3 simultaneous failure of final filters

Sellafield Ltd completed all of the steps in the Enforcement Notice served on 19 July 2010. We reviewed the evidence pack and closed out the Enforcement Notice on 17 December 2010. Sellafield Ltd is currently trialling more robust filters on Sea Line 3.

6.3 Exclusion of entrained solids from aqueous discharges

We served an Enforcement Notice on Sellafield Ltd in May 2007 requiring demonstration that Best Practicable Means were being used to exclude entrained solids from aqueous discharges. This has resulted in a lot of work being done by Sellafield Ltd including: production of entrained solids BPM cases for all facilities; sampling and characterisation of the solids loading in different streams; and multi-disciplinary workshops to consider improvements that can be made to key facilities (Segregated Effluent Treatment Plant, Laundry, Lagoon, Break Pressure Tank and the sea lines). These workshops gave rise to a forward work programme and there remain outstanding actions from the facility entrained solids BPM cases. We determined that the scope of the Enforcement Notice had been met, and closed it out on 17 December 2010. We have included the forward work programme in a revised Environment Agency Requirement under the Environmental Permit.

7 PLANNING, STRATEGY AND NATIONAL INTERVENTIONS

7.1 Site Leak/Mitigation Strategy

Sellafield Ltd is developing a site leak prevention/mitigation strategy. Significant support and advice has been given to facilitate this development. This is because we are keen to see the approach piloted for the Magnox Swarf Storage Silos as soon as practicable where there is a risk of further leaks during waste retrieval operations.

7.2 Sellafield High Hazard and Risk Reduction Plan

We are continuing to press for a public version of the SHHaRRP as soon as practicable.

7.3 National Nuclear LLW Strategy

We are continuing to engage with the NDA, LLW Repository Limited, the wider nuclear industry and local authorities regarding the implementation of initiatives to deliver the National Nuclear LLW Strategy. During November we attended a LLW Strategy Group meeting.

7.4 Magnox Operating Programme (MOP) and Contingency

Reprocessing of spent Magnox fuel remains behind schedule for 2010/11. Some improvement has been seen in flask availabilities and fuel deliveries, although improvements in flask maintenance turn-around times and reprocessing plant availability will be needed to meet the stretch MOP targets (March 2016). Together with NII we have urged Sellafield Ltd and NDA not to be overly optimistic in their planning assumptions for completion of the MOP.

Improvements in the washing process for corroded fuel in FHP have been sustained, enabling a number of skips of such fuel to be 'pre-washed' ready for reprocessing. Good progress continues to be made on the development of a contingency in the event that reprocessing ceases to be an available route for managing spent Magnox fuel.

7.5 Oxide Operating Strategy

Sellafield has confirmed that the inventory of the AGR fuel exposed to elevated chloride levels in 2005 will be reprocessed by Jan 2011. Pond water levels are now back to pre-2005 levels. There has been no progress on the oxide fuel drying contingency, as the emphasis has been on providing contingency for Magnox fuel.

7.6 Life Time Performance Plan

Sellafield Ltd has developed the MSSS, PFCS and FGMSPP performance plans to the start of retrievals with all showing some acceleration (a year or two) when compared to the LTP10 contract baseline. Work continues on opportunities to see if further progress can be made leading to an earlier start to bulk retrievals and to develop the performance plans that deliver earlier completion of retrievals and decommissioning of the legacy facilities. The PFSP performance plan is now broadly defined to the end of bulk retrievals and has an end date significantly earlier than the contract baseline. SL's work on the performance plan is now focusing beyond the start of retrievals for the LP&S programmes and on developing the performance plan for the rest of the site programmes. This process should be substantially developed by January 2011 and complete by March 2011. In summary, our position remains that we will do all we can to support the implementation of the performance plans and encourage further improvement. However, we continue to have concerns over the overall timescales for clean-up of the legacy facilities and the lack of strategic contingencies. We continue to keep this under review.

7.7 Overall Effluent Strategy (OES)

We reviewed progress with Sellafield Ltd in October 2010. Generally the OES model, using the Life Time Plan contract baseline assumptions, is predicting that no discharge limits are threatened and that all of UK discharge strategy targets will be met. The exception is that technetium-99 (Tc-99) discharges are predicted to potentially exceed the UK discharge strategy targets in later years. At this time the potentially most significant source of Tc-99 is predicted to be from the MSSS facility clean-up programme. Technical work is currently being undertaken to further investigate this issue. Good progress has been made with close out of relevant observations made during our aqueous waste team inspection in 2009. The OES model will be used in future to back calculate site discharges by major activities as required under the site permit.

8 COMMUNICATION

8.1 Radiological Protection Institute of Ireland (RPII)

We met with RPII in Dublin to inform them of our recent developments at Sellafield and other West Cumbria nuclear sites. We explained our position on the Sellafield Lifetime Plan 10 & the developing performance plan and informed them of the outcome of the Article 35 visit to Sellafield in August.

9 OTHER AREAS OF WORK

9.1 Decommissioning Emergency Arrangements

We have been working with the NII to press for improvements in legacy ponds & silos emergency arrangements. Sellafield Ltd has now established an improvement plan. We have acknowledged that some good progress has been made in reviewing arrangements and starting to address identified gaps, we continue to work with NII to press for further sustained development in this important area.

9.2 Internal Assurance

We have spent two periods of two weeks observing the Sellafield Ltd Site Inspection Team. This has given us a good insight into the work of the team. We have identified a number of ways to improve the effectiveness of internal and external regulation, including: more joint inspections; sharing of reports and influencing relevant inspection checklists.