QUARTERLY REPORT TO
WEST CUMBRIA SITES STAKEHOLDER GROUP

1 JANUARY – 31 MARCH 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 January to March 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.

EXECUTIVE SUMMARY

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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) near Drigg during January-March 2010.

Highlights include:

- We continued working with the Nuclear Installations Inspectorate to encourage the development by Sellafield Ltd, of a High Hazard Risk Reduction Plan (HHRRP) and supporting framework as a means to help secure early reduction in the major hazards and risks at Sellafield.
- The consultation on the variation of the Sellafield & Windscale RSA93 authorisation closed.
- The need for an Article 37 submission means a delay before a decision can be reached on the application for Waste Recycling Limited's (WRL) to dispose of HV-VLLW at their Lillyhall landfill site.
- We conducted inspections of Plutonium Finishing & Storage Plant (PF&S), Pile Fuel Storage Pond (PFSP), Pile Fuel Cladding Silos (PFCS), Magnox Swarf Storage Silos (MSSS) & the First Generation Magnox Storage Ponds (FGMSP).

1 INTRODUCTION

This report presents a summary of our work at Sellafield, Windscale, Calder Hall, the Metals Recycling Facility at Lillyhall and the Low Level Waste Repository (LLWR) near Drigg from January to March 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 Radioactive Substances Act 1993 (RSA93), the Environmental Permitting Regulations 2007 (EPR); 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 follow this link.

2 AUTHORISATIONS AND PERMITS

2.1 Radioactive Substances Act 1993 (RSA93)

Disposal of radioactive wastes is only permitted subject to strict limits and conditions under an RSA93 authorisation.

2.1.1 Revision of the RSA 93 Authorisation

The public consultation on the variation to the Sellafield and Windscale RSA authorisation continued this quarter. We intend to revoke the current authorisation and to issue a new varied authorisation that consolidates all of the changes made since the multi-media authorisation became effective in October 2004.

The consultation period ended on 8 February 2010. There were a number of responses, but most concern was expressed about the proposed new transfer routes for low level waste oils to the incinerator at Hythe, Hampshire and for High Volume Very Low Level Waste (HV-VLLW) to Lillyhall landfill. We have now assessed the responses received, and are drafting the relevant documentation including a revised RSA93 authorisation and Compilation of Environment Agency Requirements (CEAR).

As previously reported we are awaiting an opinion from the European Commission on the Article 37 submission made by the UK before we can increase the site discharge limit for discharges of antimony-125 to air.

The Department of Energy and Climate Change (DECC) has decided that Article 37 opinions are required for landfills prior to them being authorised under RSA93 (see below). This will delay the authorisation of the Lillyhall landfill. As a consequence, we have decided not to include the proposed HV-VLLW transfer route to Lillyhall landfill in the revised authorisation. We will reconsider the proposed transfer route if and when the Environment Agency issues a permit for disposals at Lillyhall following receipt by DECC of a positive Article 37 opinion.

2.1.2 Disposal of High Volume, Very Low Level Radioactive Waste (HV-VLLW) and Low Level Waste (LLW)

During this period we concluded our review of Waste Recycling Limited's (WRL) application for disposal of HV-VLLW to landfill at their Lillyhall site. We have also prepared responses to all consultation comments to be issued in our Decision Document and have undertaken a Readiness Review of WRL. However, during this period the Department for Energy and Climate Change (DECC) has informed us that a decision has been reached that WRL must make an 'Article 37' submission for their application to the EC under the Euratom Treaty. This application and decision process is expected to take more than 6 months to complete and we do not anticipate being able to issue a decision before this point.

During this period we have reviewed, and will make comments on, Endecom's application to Cumbria County Council for planning permission to dispose of Low Level Waste at the Keekle Head former open cast mine.

2.2 Environmental Permitting Regulations (EPR)

2.2.1 Sellafield's Environmental Permit

We have received an application from Sellafield Ltd to change (vary) its Environmental Permit. Sellafield Ltd (SL) has asked for a number of changes to the permit to be considered. These reflect a number of changes in operations that have occurred since the permit was issued in 2007, and the integration of changes to operations resulting from improvement programmes as well as a number of minor

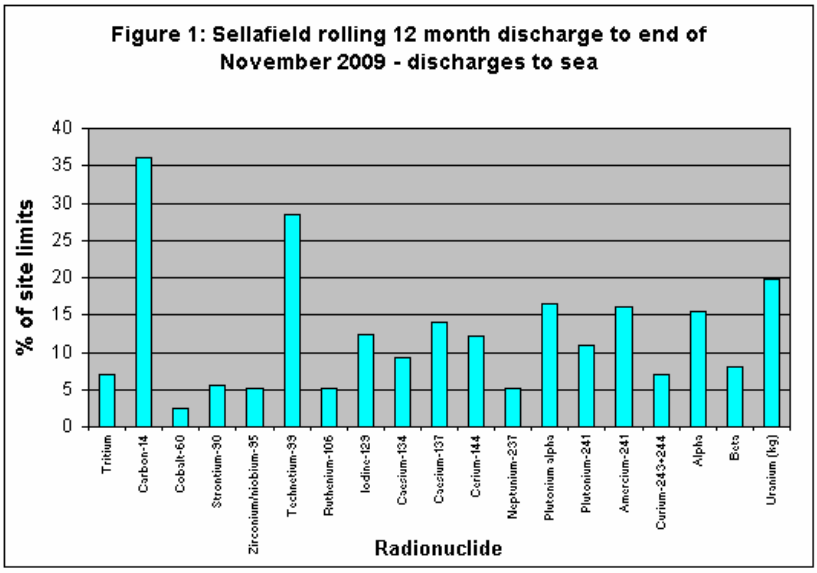
administrative changes. Determination of the permit will take around 2-3 months, and will ensure that the permit and its conditions remain fit for protecting the environment and human health.

3 DISCHARGES & THEIR IMPACT ON THE ENVIRONMENT

3.1 Radioactive discharges

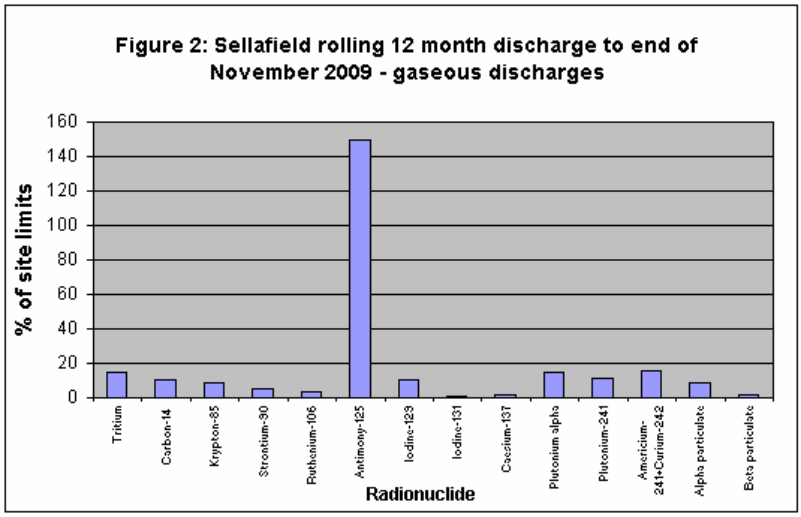
We aim to ensure that the public and the environment are protected from radiation exposure that may result from the discharge and disposal of radioactive waste. There was one breach of authorised site limits for aerial discharges in this quarter at the Sellafield site – as previously reported this relates to the increase in antimony-125 discharge.

3.1.1 Discharges to Sea



Radioactive discharges to sea from Sellafield over the 12 months to the end of November 2009 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

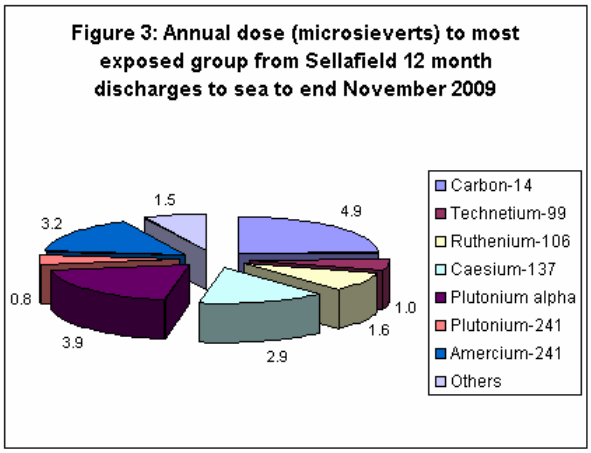


We have previously reported (in previous issues of this report and in a special briefing note available on the WCSSG website) on the unavoidable increase in the discharge of antimony-125 to air. The radiological impact from the discharge of this radionuclide into the environment is very small. As previously reported (see last report), no enforcement action will be taken in relation to the confirmed exceedance of antimony-125. However, we have required further action for SL to enhance its arrangements for measuring antimony-125 releases to air.

3.1.3 Disposals to Land

These figures are compiled on an annual basis, please refer to the April-June 2009 report for 2008/9 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. The assessed annual radiation dose for discharges to sea made during the 12 month period up to the end of November remains at about 21 microsieverts – Figure 3 gives the contributions to this dose from the various radionuclides.

3.3 Environmental Monitoring

Monitoring of beaches has proceeded according to the agreed programme at St Bees, Braystones, Sellafield and Drigg. Increased alpha-rich particle find rates continue as a result of the deployment of the new Synergy detector system, which has improved detection sensitivity for these particles. Of note, higher find rates have been seen at the southern end of Braystones beach. However, the nature of the finds, and the numbers being detected, do not change the position in relation to risks to members of the public; HPA advice remains that no special measures are necessary.

We have published a strategy for responding to particle finds on our web-site at by following this link.

4 COMPLIANCE ASSESSMENT

4.1 Site Inspection & Compliance

4.1.1 Inspection of Plutonium Finishing & Storage Plant (PF&S)

We inspected the PF&S in January with NII to check whether Sellafield Ltd is making progress in responding to the discovery over the past 2 years of a number of areas of contamination in, for example, drains and redundant fan housings. While progress is

being made, the pace of progress is too slow in some areas and defined work programmes and target completion dates for actions are not being used to drive progress as effectively as they should. As a result of the visit, we made a number of recommendations and plan to return in 6 months time to check progress.

4.1.2 Pile Fuel Storage Pond (PFSP)

We conducted an environmental review inspection of the PFSP, which is used for underwater storage of irradiated legacy fuel and isotopes. In summary the findings were:

- No significant compliance issues were identified;
- Good progress is being made with environmental assessment to underpin the application of Best Practicable Means/Best Available Techniques to minimise discharges and waste disposals; and
- Slow progress is being made with restoration of the pond, with the current focus being on cleaning sludge from certain areas of the pond.

We will incorporate the overall findings from the inspection and a general review of developments over the past year into an updated version of our PFSP environmental review. This will be shared with SL and will inform our future regulation, regulatory strategy, plans and priorities.

4.1.3 Plutonium Contaminated Material (PCM)

We carried out a joint team inspection with the NII on PCM. This inspection formed part of an NII led intervention programme on waste and its storage which will continue throughout 2010. In general our findings were positive, however we did find a few areas for improvement. A report of the findings of the inspection will be produced in May 2010.

4.1.4 Low Level Waste Repository (LLWR)

Vault 9 construction continues to make progress. We regularly inspect construction activities and monitor the quality assurance of construction activities. We have been paying close attention to methods proposed for the construction of the vault sidewalls which represent a new and unique engineering challenge. We believe reasonable approaches have been identified, but will continue to closely monitoring trials to demonstrate the efficacy of the proposed approach.

The Operators of the LLWR are required to deliver an updated Environmental Safety Case for continued disposal at the site by May 2011. This is a vital requirement for the site and we therefore continue to meet regularly with the site operators to review progress and clarify our expectations for this deliverable. One of the key requirements we placed upon LLWR in the run up to May 2011 was a requirement to carry out a review of developments in best practice to minimise impacts from disposals and to reduce peak risks. This review also provided us with a good update of progress towards the full Environmental Safety Case. We assessed this submission in detail and our reports on this review, including comments and recommendations to LLW Repository Limited, have now been published on a new web page (click here) addressing LLW and LLWR.

4.1.5 Studsvik Metals Recycling Facility, Lillyhall

We inspected the facility in January focussing on environmental discharge reports. No issues were identified. A further inspection visit is planned for March. This visit will look at clearance of wastes for disposal from the site now that a number of consignments of metal waste have been received and are being processed by Studsvik.

4.1.6 Aqueous Waste Management at Sellafield

Sellafield Ltd has agreed to address all the findings of our team inspection carried out in June 2009. Over the coming period we will continue to work with Sellafield to ensure the work programme addresses our findings.

4.1.7 Gaseous Waste Management at Sellafield

There has been an increasing number of torn sample filters used to sample gaseous waste discharged from the Sellafield site. The significance and cause of this trend is currently being investigated. Possible factors being followed up are filter manufacture and specification, filter change and reporting practices and procedures.

4.1.8 Control of Major Accident Hazards (COMAH)

Sellafield is a lower tier (LT) site under the COMAH Regulations. We were recently informed by SL that when certain inventories of (non-radioactive) chemical reagents were aggregated, they exceeded the top tier (TT) thresholds for certain substances.

The exceedance of LT threshold limits does not indicate an increased risk on the site or a failure to manage current inventories properly. However, the failure to notify has been considered by the Environment Agency and the Health and Safety Executive (the joint 'Competent Authority' under the COMAH Regulations) as an administrative breach and we have written to require steps be taken to remedy the breach. SL will need to demonstrate that its control of chemical reagents within lower tier limits would not impact adversely on the nuclear safety of the plants that use the reagents.

We and the HSE will continue to monitor closely SL's progress in this area.

4.1.9 Pile Fuel Cladding Silos (PFCS)

We conducted an environmental review inspection of the PFCS, which is used for storage of legacy wastes from the Windscale piles and Pile Fuel Storage Pond (PFSP) operations. In summary the findings were:

- No significant compliance issues were identified and good progress has been made with addressing issues identified through previous inspections;
- We were pleased to see progress being made with preparing the foundations for the waste retrieval plant and upgrading the ventilation system; however
- The predicted timescales for retrieving the waste and decommissioning this facility continue to be a significant concern, although we recognise much work is on-going which seeks to accelerate this programme.

As with the PFSP inspection, we will incorporate the overall findings and a general review of developments over the past year into an updated version of our PFCS environmental review.

4.1.10 First Generation Magnox Storage Pond (FGMSP)

FGMSP pond water is taken from the Fuel Handling Plant (FHP) fuel storage pond. The transfer of radioactivity in the pondwater from FHP to FGMSP contributes to worker radiation exposure and discharges to air from the FGMSP. SL propose to trial a new FGMSP pond water make-up system using clean water. We do not intend to raise objections to the trial proceeding, although we have provided SL with the findings of our review which we expect it to consider prior to the trial commencing.

4.1.11 Management of LLW at Legacy Ponds and Silos

We inspected the storage of solid LLW in outside areas at the Magnox Swarf Storage Silos (MSSS) and FGMSP facilities in February. We raised a number of concerns about the condition of, and the systems for managing, these wastes.

We recognise that there has been, and continues to be, improvement in reducing the amount of waste stored external to buildings, but there is still considerable work that is required to bring these facilities up to the expected standards. We are working together with NII to bring about improvements.

4.1.12 Magnox Swarf Storage Silos (MSSS)

Following a successful trial a couple of years ago, SL are now seeking to routinely reduce the radioactivity levels in the silo water in the newer part of the facility via transfer of contaminated liquor to the Site Ion Exchange Plant (SIXEP). Within SIXEP the radioactivity is removed into solid waste and then stored in plant which aligns with modern standards. We are currently reviewing SL's case supporting this change. We are encouraging SL to develop the means to also transfer liquor from the older silos as soon as practicable as we believe these represent a greater environmental risk and also to develop robust plans for the treatment of SIXEP wastes, as currently there are no means to retrieve and treat this waste.

4.1.13 Separation Area Ventilation Project

SL is engineering a re-direction of gaseous effluents away from the old Magnox Reprocessing and Magnox cell ventilation stacks to a new stack. This project is making good progress with significant work undertaken to establish connection points to the existing ventilation system and to undertake ground works to allow the new ventilation ducting and stack to be constructed.

4.1.14 Magnox Operating Programme (MOP)

We attended the first quarterly MOP Regulatory Forum meeting of 2010. There is a continuing shortfall on Magnox fuel reprocessing through 2009/10 due to a number of reasons, but most significantly problems with fuel flask availabilities, which have prevented fuel from being transported from the Magnox power stations to Sellafield. Over the next 6 months the impact on the MOP of this situation should become clearer.

4.2 Incidents & Events

4.2.1 Magnox Operating Unit - condensate leaks

Sellafield Ltd reported two leaks of contaminated condensate liquor that had been detected from condensate drain sampling arrangements in the Magnox reprocessing area. As a result of this, we required SL to undertake radiological assessments at all such locations in the area. This revealed a further four areas of localised contamination that might be associated with liquor sampling points. Subsequently SL has agreed to extend the radiological surveys to all condensate drain sampling points across the site.

The extent and amounts of contamination involved appear to be much less than is the case for the condensate leak reported in January 2009. We are looking into the circumstances surrounding these latest events.

4.2.2 Damage to Sea Line Filters

Sellafield Ltd reported in February that both sets of filters on the Sealine 3 were found to be damaged when they were changed. We will be investigating this event and considering enforcement options.

4.2.3 Stack sampling

There were a number of minor events raised by SL in relation to sampling methods at discharge stacks in 2009. We asked SL to review these for any common issues that need to be addressed. SL found this analysis helpful and a number of improvements will be made to, for example, sample change methods.

4.2.4 Magnox Encapsulation Plant (MEP)

Sellafield Ltd reported a discharge just outside the pH limit range for a small quantity of non-radioactive liquid (grout washings). SL had already planned improved arrangements for pH measurements under Monitoring Certificate Scheme (MCERTs). The implementation of these arrangements had been delayed, but are now being pursued as a priority task.

4.2.5 Loss of Fuel Handling Plant (FHP) chiller capacity

We reported in our previous report about the loss, and subsequent re-instatement, of chiller capacity at the FHP. A further chiller has now had to be isolated because of problems with a seal. This now leaves only one chiller available to cool pondwater. We have asked SL to set out their contingency plans for responding to a possible failure of the final chiller.

4.3 Enforcement

4.3.1 Inactive Tank Farm (ITF)

We inspected the ITF to review progress against the Enforcement Notice that was issued in May 2009, as a result of leaks of non-radioactive effluent and reagents.

The recommendations, which took the form of plant and site-wide reviews of asset condition, maintenance and inspection regimes, have prompted further work and we are reviewing the status of these.

4.3.2 Vessel Vent Condensate Leak (Jan 2009)

We received a revised version of SL's response to the Enforcement Notice requirement relating to a review of the allocation of responsibilities for asset management across the site. This looks to be much improved compared to the previous version, which we rejected as inadequate. The proposal represents a significant change to the principles governing asset ownership across site and should result in much greater clarity of arrangements.

Our investigation into the leak continues. The Laboratory of the Government Chemist (LGC) has supported our independent assessment of the contamination that has resulted from the leak. LGC has carried out an audit of SL's sampling of the contamination, and LGC has obtained samples of the contaminated area for analysis.

5 PLANNING AND STRATEGY

5.1 Life Time Plan 2010 (LTP10)

We met with the lead for decommissioning zones 2 and 3 at Sellafield. Within this area a number of the decommissioning projects are being deferred. Where a deferral is proposed we have asked for a 'Best Practicable Means' review to support the case for it.

5.2 High Hazard Risk Reduction Plan (HHRRP)

We remain concerned about the emerging timescales in the interim Life Time Plan 2010 (LTP10) schedule, for the major hazard and risk reduction phase at Sellafield. We expect the phase to be completed sooner to remove the residual risks to people and the environment from the legacy facilities.

We have previously reported how we have been working with NII to encourage the development by Sellafield Ltd of a HHRRP and a supporting framework as a means to help secure early reduction in the major hazards and risks at Sellafield. SL are now committed to developing this plan.

We have commented on an early draft outline of the plan and will work with SL, NII and the Nuclear Decommissioning Authority (NDA) to facilitate the development of the first version by around the end of the financial year. We believe that these developments should help to give greater certainty, visibility, accountability, momentum and consensus in taking forward major clean-up at Sellafield.

5.3 Nuclear Materials & Spent Fuels Strategy

With NII and NDA we are pressing for SL to evaluate and compare its strategic options for dealing with spent Magnox fuel, recognising that there are a number of risks associated with the delivery of, the Magnox Operating Programme (MOP), and that the strategic imperative for reprocessing may now be different to that in the past. Much in the way of analysis needs to be carried out before any preferred alternative strategy could be supported, but we are keen to see that this analysis is carried out soon.