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Half yearly site report for

SELLAFIELD, CALDER HALL AND WINDSCALE

WEST CUMBRIA SITES STAKEHOLDER GROUP

DECOMMISSIONING SUB COMMITTEE

REPORT FOR THE PERIOD 1 MARCH 2011 – 31 AUGUST 2011

Foreword

This report is issued as part of the Office for Nuclear Regulation's (ONR) commitment to make information about inspection and regulatory activities relating to the above sites available to the public. Reports are distributed half yearly to members of the Decommissioning Sub Committee of the West Cumbria Sites Stakeholder Group (WCSSG) and cover activities associated with decommissioning and remediation of plants and facilities at Sellafield, Calder Hall and Windscale. The reports are also available on the ONR website (www.hse.gov.uk/nuclear/llc).

Site Inspectors from ONR attend the Decommissioning Sub Committee meetings and will be happy to respond to any questions raised there. Any other person wishing to inquire about matters covered by this report should contact the ONR.

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. 1. Introduction

1.1 Aim

This is a summary of the areas that have been the focus of regulatory effort on nuclear safety aspects of decommissioning over the past six months, and a forward look to those areas where effort will be spent in the future.

1.2 The Office for Nuclear Regulation (ONR)

The Government made a statement on 8/2/11 regarding its intention for the HSE's Nuclear Directorate to become a separate body known as the Office for Nuclear Regulation (ONR) pending legislation. The ONR came into being on 1 April 2011 as an agency of the Health and Safety Executive. We are now beginning to see the benefits of being able to work more closely with colleagues dealing with security and nuclear safeguards. To all intents and purposes, this also applies to colleagues who inspect nuclear transportation, although, the Government has yet to amend legislation to allow them to complete a move into ONR.

* Throughout this report, Sellafield Limited is referred to as SL.

2. Generic Issues Relevant to Decommissioning

2.1 Safety case reviews to take account of timing of decommissioning

In the previous report, we mentioned the need to pursue the issue of safety and justification of deferral of risk and hazard reduction work associated with decommissioning. We had sent letters to SL setting down our views, and prompted SL to start developing proposals for a tiered approach to reviews of safety cases that take full account of decommissioning timescales. For the "top tier" facilities where faults could lead to the most severe consequences, SL will need to provide the most demanding justification for timing of decommissioning. SL will need to assess those facilities that could present lesser, but still significant consequences, to see if preventive measures are needed to avoid them becoming the "top tier" as they age. The safety cases for the remaining facilities will need to be extended until any remaining inventory has been removed.

We welcome SL's positive response to this advice and it is adopting a tiered approach. There will be further engagement on SL's detailed implantation of this process.

2.2 Decommissioning milestones

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ONR has yet to receive full descriptions for many of the milestones that are being used to monitor the achievement of decommissioning. Discussions with SL have identified an acceptable way ahead.

2.3 Sellafield Mixed Oxide Plant

ONR and SL are beginning discussions on the decommissioning of the Sellafield Mixed Oxide Plant.

2.4 Control of Organisational Change

We have continued to monitor the implementation of the Organisational Review and Self Evaluation process (ORSE 2), in the Decommissioning Directorate. Further organisational change is likely to arise from this work and ONR will be monitoring this as part of routine oversight of the management of change.

2.5 Broad Front Decommissioning

Although our focus is primarily on decommissioning the current major risk and hazard facilities, it is important that there is sufficient attention on the other facilities waiting decommissioning and those that will need to be decommissioned when they cease normal operation in the future. In July, a tripartite meeting between SL, the NDA and Regulators (EA and ONR) was held to provide attention to this issue. An outcome of this first meeting was the need to ensure that the prioritisation process for decommissioning properly reflected the risk and hazard of some plants and facilities.

3. Nuclear Decommissioning Projects

3.1. Legacy Ponds & Silos (LP&S) Operational Nuclear Safety

During the period we carried out a number of licence conditions compliance inspections across the Decommissioning Directorate: LC 7 Incidents and LC22 modification or experiment on existing plant. No significant concerns were raised following our inspection of these licence conditions. However, we have carried out a number of inspections following up on recent events to be satisfied that SL has properly investigated and learnt the lessons from them:

SL has provided satisfactory justification that the Improvement Notice we served on SL on the 11 October 2010, regarding the control of safety mechanisms in the Magnox Swarf Storage Silo, has been complied with. However, it is disappointing that in May 2011 SL reported that a number of safety mechanisms were found to be inadvertently isolated in the Magnox Swarf Storage Silo. Plant operators responded appropriately and restored the facility to the correct configuration. Our initial investigation has revealed that

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the cause of this event is different to the previous event involving control of safety mechanisms. We have assessed SL's response to this event and are satisfied that the current improvement programme addresses the issues highlighted by this event. We will be carrying out additional compliance inspections to monitor the effectiveness of SL's improvement programme.

Regarding risk reduction projects, Sellafield Limited has continued to make good progress in the First Generation Magnox Storage Pond with the successful installation of protection systems for vulnerable pipe work.

The site Level 1 exercise was held on the 12 May 2011 with a scenario based on an event in the Pile Fuel Cladding Silo. One aspect of the exercise involving a new emergency control facility intended to improve SL's emergency response, was not successful, and we requested another exercise to re-demonstrate this aspect after improvements to correct shortfalls. We witnessed a successful re - demonstration of the new emergency control facility on the 29 June 2011. In fact, SL demonstrated a significant improvement during the re - demonstration with a good performance noted in overall command and control providing confidence in the effectiveness of the new facility. ONR in conjunction with the EA continues to monitor SL's progress in making improvements in SL's emergency arrangements for decommissioning. .

3.2 Legacy Silos Projects

We continued to monitor progress made by SL towards retrieval, and therefore, towards achieving risk and hazard reduction associated with the inventory from these facilities. Overall SL is progressing broadly in line with its Performance Plan (its plan of work for the site) and developing opportunities for possible further acceleration.

We have carried out inspections during the period since our last report in March, in response to SL applying for permission to use the building crane for lifts of up to 55t, as currently the crane is restricted to lifts of up to 10.5t in the Magnox Swarf Storage Silo (MSSS) facility. This crane is a key enabler to the retrievals project, as it is required to support both the installation of the Silo Emptying Plant and the removal of waste flasks out of the building, ONR are also currently considering an application from SL for the construction of the second extension lateral restraint; necessary to both improve the seismic capability of MSSS and to facilitate the control of silo liquor levels during retrievals. ONR anticipate progress in permissioning these two activities in the next quarter.

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We are satisfied that the Liquor Activity Reduction (LAR) project in the 3rd extension continues to deliver activity removal from the mobile phase via SIXEP.

Furthermore, along with the Environment Agency (EA) we are working with SL on the development of a more robust leak containment strategy for MSSS that is consistent with SL's long-term retrieval programme.

Construction of the Box Transfer facility has now commenced (permission was given to commence construction early this year). A recent inspection has confirmed that this is proceeding on programme. This new facility is an integral part of the MSSS retrieval stream, forming part of the MSSS waste treatment plant Sellafield Direct Encapsulation Plant (SDP).

Of note within the Pile Fuel Clad Storage Silo (PFCS) is the commencement of construction of the Waste Retrieval Facility (WRF) Superstructure and associated control room. This is an important step in progress towards retrieval of waste from this facility. We granted a Licence Instrument to permit the start of this work on the 5th July after careful consideration of the supporting safety case. An inspection of important nuclear safety aspects of the construction activities which had just begun gave confidence that SL has adequate control and supervision arrangements in place.

3.3 Legacy Ponds Projects

We continued to monitor progress made by Sellafield Ltd with the projects aimed at hazard and risk reduction and those required to enable the retrieval of the inventory from these facilities.

Of note is the work to remediate degradation associated with the First Generation Magnox Storage Pond (FGMSP), which involve the use of novel techniques. Two Licence Instruments will be required to permission this work and we are in the final stages of discussion with SL on the safety issues and arguments to be addressed prior to granting permission.

We are continuing to monitor progress on the major construction projects, Sludge Packaging Plant 1 (SPP1) and Pile Fuel Storage Pond (PFSP) Local Sludge Treatment Plant (LSTP). We undertook an inspection of Sellafield Ltd's process for reconciling the LSTP safety case with the periodic plant design changes being made and found that a satisfactory process was in place.

Currently, we are assessing SL's safety case to test a proposed route to remove a small amount of spent fuel stored in the Pile Fuel Storage Pond. This pilot project is an important step in the programme for remediation of this facility.

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We observed a Workshop held by SL to consider options for dealing with the hazardous material that will be retrieved from the First Generation Magnox Storage Pond. This is a first step in developing waste routes for the retrieved solid materials, and while we welcome this step, we consider that there is much work to be done to ensure that there are viable and safe waste routes ready to receive retrieved material.

3.4 Sellafield Site Remediation and Decommissioning Projects (SRDP)

3.4.1. Inspections

We have carried out routine site inspection of the various plants and projects underway in the Decommissioning Directorate's Site Remediation and Decommissioning Projects (SRDP) unit. On the basis of these sampling inspections, we are satisfied that SRDP has shown adequate compliance with the Site Licence Conditions.

3.4.2 North Group Legacy Buildings

Following discussions earlier in the year, SL has now demolished some original buildings to the North of the site that have been used for storage in the last few years. Although not a significant risk, SL shared ONR's view that their condition had deteriorated and was not acceptable for the standards of a nuclear site.

3.4.3 Removal of Alpha Contaminated Ion Exchange Columns

We assessed SL's proposal to remove some redundant, contaminated ion exchange resin columns that were in an area of the Analytical Services Process Facilities undergoing decommissioning. Originally, these columns were believed to present a significant risk and hazard within the facility, and this had delayed progress in decommissioning this area of the facility. We were satisfied with the underpinning work carried out by SL that showed the risk and hazard was much less than believed, and therefore, we were able to advise SL that we considered it had an adequate safety case for the removal and transfer of the columns into storage in an appropriate waste storage facility.

3.4.4 Pile 1 Chimney

We have welcomed SL's decision to accelerate the removal of the filter gallery from Pile 1 Chimney in the financial year. This will address our concerns with the current safety case that we have discussed with SL that this structure is deteriorating and that it is better to begin removal while SL still have confidence in the integrity of the filter gallery. Enabling work has already commenced to start this project this Autumn and complete it by March 2012.

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3.4.5 Sep Area Ventilation Project

Construction of the major structures forming the Separation Area Ventilation facility is now completed. Preparation for final tie-ins to the ventilation system and pipe bridges is currently underway. The project is slightly behind programme but SL has put in place mitigation measures and believes the programme is recoverable. Active commissioning is to commence in June 2013 and will be phased. We remain satisfied with SL's progress in constructing this important safety related plant. Completion of this project will allow SL to demolish the stack on the Primary Separation Plant., as it will no longer be needed as part of the ventilation system. .

3.5 Windscale

An initial meeting for utilising WAGR's intermediate level waste encapsulation facility has taken place. SL consider this to be an opportunity to deal with some less hazardous waste while it continues to develop the Sellafield Direct Encapsulation Plant (SDP) to receive the bulk of the retrievals of the very hazardous waste from MSSS . The proposal is supported by ONR as it offers mitigation and contingency to the timely start of retrievals and therefore hazard reduction in MSSS. Also, we consider that this work is unlikely to distract SL from its pursuit of the SDP.

3.6 Calder Hall

We have continued to monitor and discuss the deterioration of Calder Hall's heat exchangers and support steel work. We remain satisfied with SL's management of this issue. SL has examined some of the bolts required to provide seismic restraint and found significant corrosion. It has now decided to extend this programme and replace bolts that have corroded beyond a limit defined by the safety case.

3.7 Sellafield Contaminated Land & Groundwater Management

Following an inspection against LC 34 on control of leakage and escape from nuclear plant, a number of recommendations were identified and sent to SL. It was acknowledged by ONR that SL was already in the process of improving its Arrangements under LC 34. One of the key points for leakage and escape for decommissioning is asset management, and we are satisfied that this has been recognised by SL who are putting more robust systems into place to reduce the probability of future leakage and escape that could lead to problems if there is a breach of containment.

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