

HSE's Nuclear Division
Nuclear Installations Inspectorate

**NII's Report to the West Cumbria Sites Stakeholder Group
Decommissioning Sub-Committee Meeting of 10 September 2009**

1. Introduction

This report is to inform members of the WCSSG Decommissioning Sub-Committee of the main issues and activities for the NII with respect to decommissioning (hazard and risk reduction, remediation and demolition) at Sellafield.

This report should be read in conjunction with the NII's report to the WCSSG main committee. The dominant issue has concerned progress against the Specifications related to legacy facilities.

2. Current Issues and Progress

2. Specifications

In 2000, the NII placed Specifications (Nos. 324, 325 and 326 attached to this report for information*) on BNFL under the Licence Conditions because we believed that they were the best tool at the time to push BNFL to address the ILW issues associated with certain high hazard legacy facilities, including the LP&S plants. The Specifications place limits on where and how much radioactive waste can be accumulated in a location. Prior to 2000, we had not been satisfied with BNFL's progress in improving the safety of the legacy facilities as both inventory and facilities were degrading and further wastes were being accumulated. The Specifications were goal setting in nature but had a prescriptive element in that dates were specified by which work had to be completed and the type of containment for the storage of recovered ILW from some facilities was prescribed.

The dates used in the Specifications were based on programmes provided by BNFL in the late 1990's. SL has told us that these programmes did not make adequate provision for the risks to delivery that are now better defined, had limited underpinning due to their relative immaturity then, and at that time, the scope and complexity of the challenge posed by the facilities and the inventory they contained was not fully anticipated. However, the Specifications did ensure that there was focus on the need to reduce the hazards and risks from the legacy plants and stores at Sellafield.

It has been evident for some time that the programmes covering the majority of the legacy high hazard facilities will not be completed to the planned timescales and the related Specification dates will not be met. Generally, SL has given reasons for the delays: arising technical issues, resource

constraints, supply chain issues and work priorities. SL has failed to meet the first Specification relating to Legacy Ponds plants, which is the Pile Fuel Storage Pond Specification 325 (a) which came into effect on 1 August 2009. This required at least 90% of the total volume of potentially mobile Intermediate Level Waste which has been accumulated as sludge to be stored as a sludge/slurry form within modern standard stainless steel containment.

Therefore, we are, presently, considering our regulatory response to this failure, and we will base our response on the guidance in the HSE's Enforcement Policy Statement and Enforcement Management Model. The main issue is to judge whether SL has done all that is reasonably practicable to satisfy Specification 325 (a) and meet its due date. To this end, SL has provided the additional information we have requested. There is no doubt that SL has made progress towards meeting Specification 325(a) and has stated its intention to comply as soon as is practicable.

The environment in 2000 when the Specifications were laid has changed significantly and there is now more focus on decommissioning to achieve hazard and risk reduction. The NDA was formed in 2005 and it was given the prime responsibility for moving forward decommissioning on the site. A new Sellafield Executive has been put in place with the remit of accelerating the remediation of the high hazard legacy facilities. More recently a Sellafield Remediation Forum has been set up, chaired by Lord Hunt, DECC Minister and senior representatives from the NDA, SL, NII and EA as well as various Government stakeholders from relevant departments, to discuss progress on the management of the high hazard legacy facilities and to address any strategic barriers that may be in their way from carrying out their duties effectively.

The Specifications were effective for focussing attention on the importance of remediating high hazard facilities and resulted in remediation programmes being developed and resources and funding being made available. However, the majority of the Specification dates are proving to be challenging, and with hindsight, this is not surprising owing to the inherent uncertainties associated with remediating high hazard legacy facilities. Also, as SL have told us, the original programmes were not fully underpinned, and so, there was going to be significant risk to meeting Specification dates.

In view of the above we are still considering the way forward with respect to the use of the Specifications and will keep you informed of the outcome. We are engaged with SL on the development of its Lifetime Plan (the next version of this is known as LTP 10), as this will influence our regulatory stance on the legacy facilities. However, there will be no relaxation of our regulation of Sellafield's legacy facilities. What we are doing is trying to ensure that our regulation helps achieve hazard and risk reduction safely and as soon as practicable and does not distract from this goal.

2.2 Lifetime Plan 10

The Government has asked us to work through the Sellafield Remediation Forum to focus on the key strategic and operational issues around the high hazard facilities. NII is maintaining oversight of the development of the LTP10 build and assurance process to provide advice and to confirm that safety is not compromised.

Sellafield Ltd has produced ten Safety, Security and Environmental Impact (SSEI) assessment reports plus a summary document. These reports record the potential effects of project deferrals at high hazard facilities between the plans made in 2007 (LTP07) and the revised 2009 plan (LTP09). The findings of these reviews, together with workshops reviewing deliverability based on historic performance will inform the process to build a new contractual LTP10 for the site.

We have assessed the SSEI reports with the help of a contactor. The reports will contribute to the prioritisation process. We have advised the site of several issues that were not mentioned in its summary report and that we believe more emphasis could have been given to issues in connection with several legacy facilities. We concluded that the risk of a major event caused by further degradation of legacy plant or increased time at risk due to deferrals is far too high and have written to SL to advise that every effort should be given to reducing the risks at the earliest opportunity.

2.3 Improvement Notice

In 2007, we issued an Improvement Notice seeking improvements to the risk assessment and risk management associated with decommissioning of plants and facilities where plutonium contamination is an issue. Plutonium is a major hazard and proportionately, requires more attention. In Law, this requires that a licensee does all that is reasonably practicable to reduce risk (ALARP). We have considered SL's submissions to satisfy the Improvement Notice and wrote to SL on 28 July stating that in our opinion, we were satisfied with the response. In fact, we consider that SL's revised arrangements for assessing decommissioning risk are a significant improvement, and that SL has carried out a lot of good work to underpin the new arrangements for risk assessments to protect workers carrying out decommissioning. We have advised SL to continue to pursue improvements in the decommissioning of plutonium contaminated facilities, in accordance with ALARP.

2.4 Future Decommissioning

It became evident from SL's work to satisfy the Improvement Notice that there is a need to review and develop techniques for the decommissioning of some of the large facilities at Sellafield in the future. The current methods may not be suitable to achieve the level of safety and timely decommissioning that we

all want. Also, ALARP requires continual challenge to ensure that new or improved options have been considered.

SL has taken the lead in setting up a forum for Regulators, the NDA and SL to discuss future decommissioning of its plants. It is an important step as there is a need to be able to provide the public with confidence on the safety, environmental impact and costs of decommissioning. The first meeting was held in July 2009. Like the EA, we are fully supportive of this forum. It provides a focus where high level strategy and practical implementation can be scrutinised.

Dr R E Waters
HM Principal Inspector of Nuclear Installations
4 September 2009

Appendix

Specification No. 324

The Health & Safety Executive, in accordance with the provisions of condition 32(5) of schedule 2 attached to Nuclear Site Licence No 31F, hereby specifies that the licensee shall not accumulate radioactive wastes listed in the schedule below except in a place and manner approved by the Executive. This Specification shall come into effect on 1 August 2004 for a), on 1 August 2004 for b), and on 1 August 2010 for c) and 1 August 2016 for d) as described in the schedule below.

Schedule:

- a) Plutonium contaminated material within drums, crates and other containment kept in B209, B209 & B229 Compounds, and B299 Fuel Plant Facilities.
- b) Contents of the B100 series of stores inclusive of B136 & B158 which have been accumulated as radioactive waste.
- c) Contents of B243 which have been accumulated as radioactive waste.
- d) Contents of B41 which have been accumulated as radioactive waste

Specification No. 325

The Health & Safety Executive, in accordance with the provisions of condition 32(4) of schedule 2 attached to Nuclear Site Licence No 31F, hereby specifies that in respect of the facilities within the Sellafield nuclear licensed site as defined on 1 August 2000, radioactive waste listed in the schedule below shall

be stored in a quantity, type and form specified in the schedule. This Specification shall come into effect on 1 August 2009 for a) and 1 August 2010 for b) as described in the schedule below:

Schedule:

- a) At least 90% of the total volume of potentially mobile Intermediate Level Waste which has been accumulated as sludge in B29 ponds shall be stored as a sludge/slurry form within modern standard stainless steel containment.
- b) At least 90% of the total volume of potentially mobile Intermediate Level Waste which has been accumulated as sludge in B30 Pond and Bays shall be stored as a sludge/slurry form within modern standard stainless steel containment.

Specification No. 326

The Health and Safety Executive, in accordance with the provisions of condition 32 (4) of schedule 2 attached to Nuclear Site Licence No 31F, hereby specifies that in respect of the facilities within the Sellafield nuclear licensed site as defined on 1 August 2000, radioactive waste listed in the schedule below shall be stored only in a quantity, type and form as described in the schedule.

This Specification shall come into effect on 1 August 2020 for a) and 1 August 2020 for b) as described in the schedule below.

Schedule:

- a) At least 80% of the total volume of all Intermediate Level Waste sludges originating from operations prior to 1 August 2000 and which have been accumulated as radioactive waste shall be stored in a safe passive form.
- b) At least 90% of the total volume of all Plutonium Contaminated Material originating from operations prior to 1 August 2000 and which as been accumulated as radioactive waste shall be stored in a safe passive form.

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Schedule:

- e) Plutonium contaminated material within drums, crates and other containment kept in B209, B209 & B229 Compounds, and B299 Fuel Plant Facilities.
- f) Contents of the B100 series of stores inclusive of B136 & B158 which have been accumulated as radioactive waste.
- g) Contents of B243 which have been accumulated as radioactive waste.
- h) Contents of B41 which have been accumulated as radioactive waste

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Schedule:

- c) At least 90% of the total volume of potentially mobile Intermediate Level Waste which has been accumulated as sludge in B29 ponds shall be stored as a sludge/slurry form within modern standard stainless steel containment.
- d) At least 90% of the total volume of potentially mobile Intermediate Level Waste which has been accumulated as sludge in B30 Pond and Bays shall be stored as a sludge/slurry form within modern standard stainless steel containment.

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- c) At least 80% of the total volume of all Intermediate Level Waste sludges originating from operations prior to 1 August 2000 and which have been accumulated as radioactive waste shall be stored in a safe passive form.
- d) At least 90% of the total volume of all Plutonium Contaminated Material originating from operations prior to 1 August 2000 and which as been accumulated as radioactive waste shall be stored in a safe passive form.