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22nd October 2015

THORP flunks major foreign fuel reprocessing target.

The latest in the catalogue of chronic failures to be notched up by Sellafield's Thermal Oxide Reprocessing Plant (THORP) was confirmed by Sellafield this week when it admitted to local stakeholders that the projected completion date for overseas fuel reprocessing of November 2016 could no longer be met. Instead, the outstanding overseas contracts would be completed by November 2018 – the date set for the final closure of THORP itself.

Answering questions put by CORE to Sellafield at a meeting of the West Cumbria Sites Stakeholder Group (Spent Fuel Management) on 20th October, it emerged that despite earlier scheduling no foreign fuel would be reprocessed by the plant this financial year and that technical problems within THORP had resulted in preference having to be given to reprocessing UK AGR power station fuel. – leaving the estimated 150 tonnes of overseas fuel to be dealt with closer to the plant's closure. The overseas fuel is understood to be almost wholly sourced from German utilities, some of whom could now see their contracts completed up to 14 years late.

Providing only limited detail, Sellafield Ltd described the culprit for this 'rescheduling of contracts' as being technical difficulties associated with insoluble fuel debris (including the outer casing/cladding of the fuel) which is produced during the initial stage of reprocessing when the spent fuel is cut up (sheared) and dissolved in nitric acid. Whilst some debris is sieved out at the dissolver stage, other insoluble debris is transported within the dissolved liquor through further stages of the plant where it can cause blockages in the very equipment designed to remove the debris (centrifuges or decanter) as well as scouring and eroding pipe work. Such events have caused a number of extended THORP stoppages over the years.

Against this experience and with the zirconium alloy (zircaloy) cladding of overseas Light Water Reactor (LWR) fuel having proved more problematic than the stainless steel cladding of UK AGR in terms of blockage and erosion, the former is being side-lined to give the 21-year old plant an easier run-in to its 2018 closure date.

The now defunct claim that all overseas fuel would be reprocessed by the end of 2016 was first announced 2 years ago and was annotated as a 'key activity' in the NDA's Business Plan 2014-17. The earliest completion of overseas reprocessing work, with robust encouragement from successive Governments keen not to be embarrassed by the failure of inter-governmental contract agreements, has long featured at the top of Sellafield's 'to do' list. As THORP's largest European customer, the majority of German contracts were secured for the plant's 'baseload' period – the first ten years of operation starting in 1994. As such, some of the outstanding 150 tonnes that have now had to be put on the back-burner should have been completed by 2004.

The planned closure of THORP in November 2018 – described as a political decision unlikely to be reversed - will lead to a 4-year period of Post Operative Clean Out (POCO) of the plant. As a precursor, THORP's Receipt and Storage Pond water will be caustically 'dosed' to enable the long term storage of the estimated 5400 tonnes of AGR spent fuel that will remain un-reprocessed and pond-stored prior to disposal. Such a status has enraged Sellafield's trades unions and some local authority members who threaten to withhold any further support for the ongoing search for an underground waste dump that will contain spent fuel they consider best reprocessed.