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THE STATUS OF BNFL'S MOX PROJECT

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ABSTRACT

In the late 1980s BNFL decided to enter the MOX fuel fabrication business to support our reprocessing business and return the plutonium product to our customers in the useable form of MOX fuel. The first phase of the strategy was to gain some irradiation experience for MOX produced by our own Short Binderless Route (SBR) process. To achieve this the MOX Demonstration Facility (MDF) was built at Sellafield and 28 MOX fuel assemblies were produced up to 1998 that were loaded into PWRs in Europe.

In 1994, BNFL started the construction of their large scale MOX production plant, SMP. The design and construction of the plant and supporting facilities was completed some years ago and the commissioning of the plant with uranium commenced around June 1999. In October 2001, the UK Government provided BNFL with the approval to operate SMP with plutonium. On 20 December 2001, the UK Regulators gave BNFL their approval to start plutonium operations.

This paper summarises the approach used to commission SMP and describes some of the lessons learnt during the commissioning phase of the project and the start up of the plant with plutonium. An explanation of our experience obtaining a licence to operate the plant is provided together with a description of the changes we have made to ensure that the quality of the product from SMP can be guaranteed. Finally, the paper summarises the experience BNFL has gained during irradiating MOX fuel produced by the SBR process and explains how the data compares with that available for UO_2 and supports the in reactor use of MOX fuel made in SMP.