

News release

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Page 1 of 2

BNFL cuts Sellafield discharge by 90%

BNFL has today begun a ground-breaking chemical treatment process at Sellafield that will reduce overall discharges of the radionuclide Technetium-99 (Tc^{99}) by 90%.

This breakthrough follows years of scientific research and development undertaken by BNFL's Nuclear Sciences & Technology Services (NSTS) into abating the discharge of Tc^{99} from Sellafield and culminated last year in a plant scale trial of a unique chemical treatment process that removes more than 95% of Tc^{99} from the medium active concentrate (MAC) discharge stream. MAC is a liquid by-product of Magnox reprocessing and is the major source of all Tc^{99} discharges.

The implementation of this new waste treatment process means that all Tc^{99} discharges from Sellafield will now be reduced by 90%.

The trial involved the introduction of the chemical TPP (tetraphenylphosphonium bromide) into the Enhanced Actinide Removal Plant (EARP); the facility responsible for treating MAC. TPP enables Tc^{99} to be taken out of liquid discharges and stored as a solid waste instead of being discharged to sea.

Following the completion of the trial in late 2003 the results were sent to the Environment Agency (EA), the Health and Safety Executive's Nuclear Installations Inspectorate (NII) and Nirex for assessment. These assessments have now been completed and permission granted for the implementation of the new waste treatment method.

The implementation of the TPP process in EARP will result in a number of significant benefits:

- The annual operational level of Tc⁹⁹ discharges from Sellafield can be immediately reduced in line with national and international expectations and the wishes of Government and the Environment Agency.
- This paves the way for the EA and NII in collaboration with BNFL and Nirex to review the use of TPP in EARP with a view to reducing the annual limit of Tc⁹⁹ discharges from 90TBq to 10 TBq two years earlier than expected
- The MAC storage facility at Sellafield can be emptied more quickly and clean-up progressed sooner
- Much lower concentrations of Tc⁹⁹ will be detected in the marine environment
- The UK can further demonstrate continued progress in honouring its international commitments to reduce radioactive discharges to the marine environment

Commenting on the implementation of the TPP process John Clarke, Head of Environment, Health & Safety at Sellafield said: “We have worked closely with the Environment Agency, Nuclear Installations Inspectorate and Nirex throughout our research and development work into abating Tc⁹⁹ discharges and this success is a landmark achievement.

“The development of the TPP process demonstrates the ability of BNFL to successfully solve complex scientific and technical problems. Moreover we have done this in the public eye under intense scrutiny from interested parties both nationally and internationally.

“In addition to addressing issues of international concern and fulfilling government and regulatory requirements, this will also mean that the clean-up of certain facilities at Sellafield can be accelerated.

“As the UK nuclear industry remains subject to an ever increasing level and pace of change BNFL’s achievement in developing this process and reducing discharges shows that we are uniquely equipped to meet the challenges associated with the clean up of the UK’s nuclear legacy.”

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Notes for Editors

1. BNFL has spent approximately £12million on the research into and implementation of abatement methods for Tc⁹⁹ discharges at Sellafield.
2. BNFL has invested over £2 billion in waste management and discharge reduction techniques in recent years.

For further information please contact the Sellafield Press Office on 019467 85838/39/42/43