

NUCLEAR WASTE MANAGEMENT - PLASMA WASTE VITRIFICATION

COSTAIN

» REDUCING THE VOLUME OF NUCLEAR WASTE

DESCRIPTION

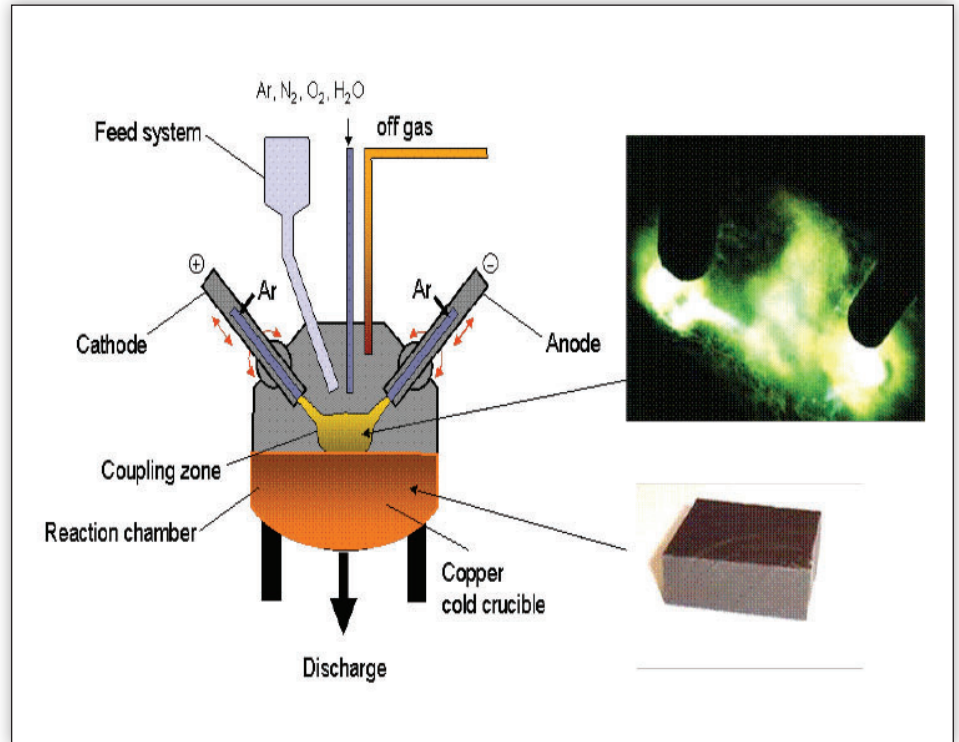
- The current baseline technology is to cement waste and store it in drums
- Using plasma heating, we are turning the waste into a glassy form, achieving a volume reduction of up to 90%
- The innovation is to achieve a nuclear-ready version of the technology in which all the challenges of remote handling, off gas treatment, nuclear safety case etc are addressed

KEY INDUSTRY CHALLENGES

- Storage of Intermediate Level Waste incurs massive cost to ensure that the waste is in a stable form for long term storage
- There is no approved storage facility in the UK and the timescale for approving such a facility is increasing
- There is significant scope to review waste treatment strategies

CUSTOMER BENEFITS

- 10-fold reduction in waste volume
- Proven industrial technology
- Final stable product
- Controllable process with high throughput – accelerated decommissioning
- Handles a variety of wet waste types
- Cost savings £4.3B compared with the current plan



CURRENT STAGE OF

DEVELOPMENT

- There is extensive experience of using this approach to treat hazardous wastes but it has not been used in the UK nuclear industry
- The development programme was supported by the Technology Strategy Board and funding secured for a 2-year development programme. This resulted in a commercial scale design supported by a safety case, and a demonstration test facility
- Excellent results were achieved including volume reduction, waste stability and plant performance

PROGRAMME PARTNER

Tetronics

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