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ELOMIX: A BETTER WAY OF HANDLING THE WASTE FROM DECONTAMINATION

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Objectives: To develop and verify the electrochemical LOMI Ion Exchange (ELOMIX) process for subsystem and possibly full system decontamination.

Comments: The ELOMIX process has the advantage of reducing the volume of secondary decontamination waste and transferring the contaminants into a stable inorganic form. This is accomplished by means of an electrochemical cell consisting of resin sandwiched between the anode and cathode. The radioactive debris are deposited at the cathode.

A small prototype ELOMIX cell was successfully tested at Commonwealth Edison's Dresden unit 2 in Oct. 1990. In May 1992, a larger scale cell capable of processing 30 litres/hr was constructed and demonstrated at Gulf States Utilities River Bend plant. The larger demo has shown that: 1) the ELOMIX system can be cleaned and transported, and 2) the metallic waste can be transferred hydraulically, enabling efficient treatment. Work is ongoing to build one full scale cell for design verification.

Remarks/Potential for dose limitation: The benefits of this process are:

- 1) Reduction in waste volume by factors of up to 140.
- 2) Conversion of the radioactive waste into a chemically more stable inorganic form.
- 3) The possibility of long term on-site storage of the waste.

References: Tucker, P. M., "ELOMIX: A Better Way of Handling the Waste From Decontamination", *Nuclear Engineering International*, Vol. 38, No. 463, pp. 18-21, Feb 1993.

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