COBALT SOURCE REDUCTION - CONTROL ROD PIN & ROLLER REPLACEMENT

Keywords: COMPONENT RELIABILITY; COBALT REDUCTION; PINS AND ROLLERS; CONTROL ROD

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Project Manager:

Objectives: Describe the General Electric program for replacing the irradiated control rod pins & rollers as a mean of reducing cobalt sources from the reactor core.

Comments:

Design:
- No EDM or welding
- Use spacer pads
- Top pins & rollers only
- Minimize implementation time

Process:
- Remove roller with hydraulic punch
- Install posi-lock spacer pad

Design of Spacer Pads:
- Two piece self locking device
- Primary retention: 7/16 inch thread
- Secondary retention: snap ring
- Material: inconel X-750 (same as current rollers)

Attributes of Spacer Pads:
- Positive self-locking device
- Retains pin segments
- Minimizes primary water circulation around pin segments
- Sized to be compatible with standard and GE 10 channels

Remarks/Potential for dose limitation:

Advantages:
- Eliminates majority of Co source
- Minimizes risk of damage to CR
- Minimizes risk of pool contamination
- Minimizes amount of waste: no EDM Swarf
- Simple/fast process
- Minimum effect on pool space
Status of program:
- BWR 2-4 (D-lattice) spacer pad complete
- Spacer pad qualification testing completed
- Spacer pad safety evaluation complete
- BWR 2-4 (D-lattice) tooling design and qualification complete
- Site demonstration successfully completed at KKM - March 1993
- C-lattice tooling design and qualification in progress
- Initial production at KKM August 1993


Duration: from: 1992 to: 1993

Status: In progress

Funding: N/A

Last Update: January 3, 1994