

Development of Rotary Microfilter for SRS/Hanford Deployment SR071101

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Presentation Outline

- **Project Description**
- **Technical Strategy/Approach**
- **Technical Results and Status**
- **Impact on High Risk/Cost Reduction or Avoidance**



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Project Description

- SRS and Hanford are developing additional processes to treat radioactive liquid waste
 - Enhanced Processes for Radionuclide Removal (EPRR)
 - Supplemental Pretreatment
 - Bulk Vitrification
- Solid-liquid separation is often rate limiting step for these processes
 - Large equipment footprint
- Increasing solid-liquid separation rate can increase volume of waste treated and reduce equipment size



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Full-Scale Rotary Filter at SRNL



Motor

25 disk filter unit

**Requires
25 – 50 gpm
pump**



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Project Description – Technical Strategy/Approach

- Upgrade existing rotary filter with air seal and improved bushing
- Test rotary filter with Hanford AN-105 simulant
- Conduct longevity test with feed simulating SRS EPRR process
- Procure small-scale rotary filter for actual waste test at Hanford
- Procure and test upgraded rotary filter at SRNL



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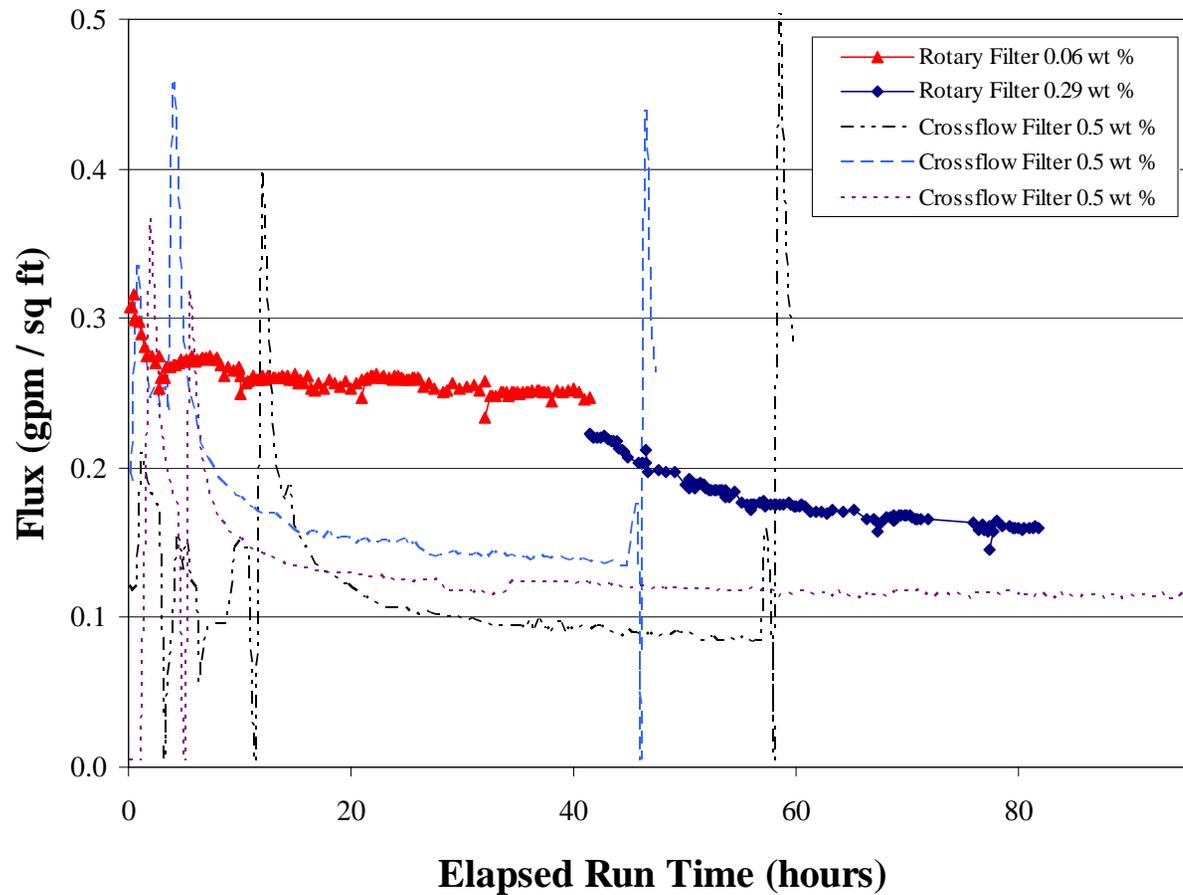
Technical Status and Results

- Upgraded seal and bushing in rotary filter
- Completed testing with Hanford simulant
- Preparing to start testing with simulated EPRR feed
- Procurement of small-scale rotary filter for actual waste test at Hanford underway
- Preparing specification for procurement of new rotary filter



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Rotary Filter Performance with Hanford Simulant



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Project Impact

- Successful incorporation of the rotary filter into the EPRR, Supplemental Pretreatment, and Bulk Vitrification Projects will allow SRS and Hanford to accelerate tank closure
 - Could increase throughput up to 6X
- Rotary filter can be placed in a waste tank riser reducing shielding requirements
- Smaller size of rotary filter system reduces disposal costs



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