3H Evaporator

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To provide an update on the 3H evaporator and status of ongoing repairs
3H Evaporator Background

- 3H is the largest evaporator on site
- Can create well over 1 million gallons of tank space gain in a year
- Essential for sludge batch preparation
- 3H Evaporator boils off water, creating space gain for the tank farms.
- Began Operations in 2000 and reached end of life in February 2016
- No spare 3H evaporator on site because of expected 30 yr. life
- Leaks identified in the bottom of the cone area
3H Evaporator

Original photo of 3H evaporator without insulation and cladding

Top View – 3H Evaporator Cell
Leak Site Identification

- Robotics developed and deployed to minimize worker exposure

Base Brokk Robot

Kuka Robot Arm Mounted to Brokk

Robots Lowered Into Cell

Robots Removing Sheet Metal and Insulation

Sheet Metal and Insulation Removed From Pot

Cleaning

Leak Site at Bottom of Evaporator Pot
Cause of 3H Failure and Repair Plans

**Cause**
Steam lance caused erosion of very bottom of pot wall over time

**Path Forward/Repair**
- Ultrasonic measurement of pot wall completed
- Laser 3-D imaging of the pot and cell completed
- Procurement and fabrication of delivery system and cap in progress
- Deploy and perform weld repairs with robots

**Contingency Plan**
- Proposals received for fabrication of new evaporator vessel
- Decision to procure new vessel is dependent on repair success and funding
Questions?