



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

AMWTP FY2016 Scope and Production Plan Overview

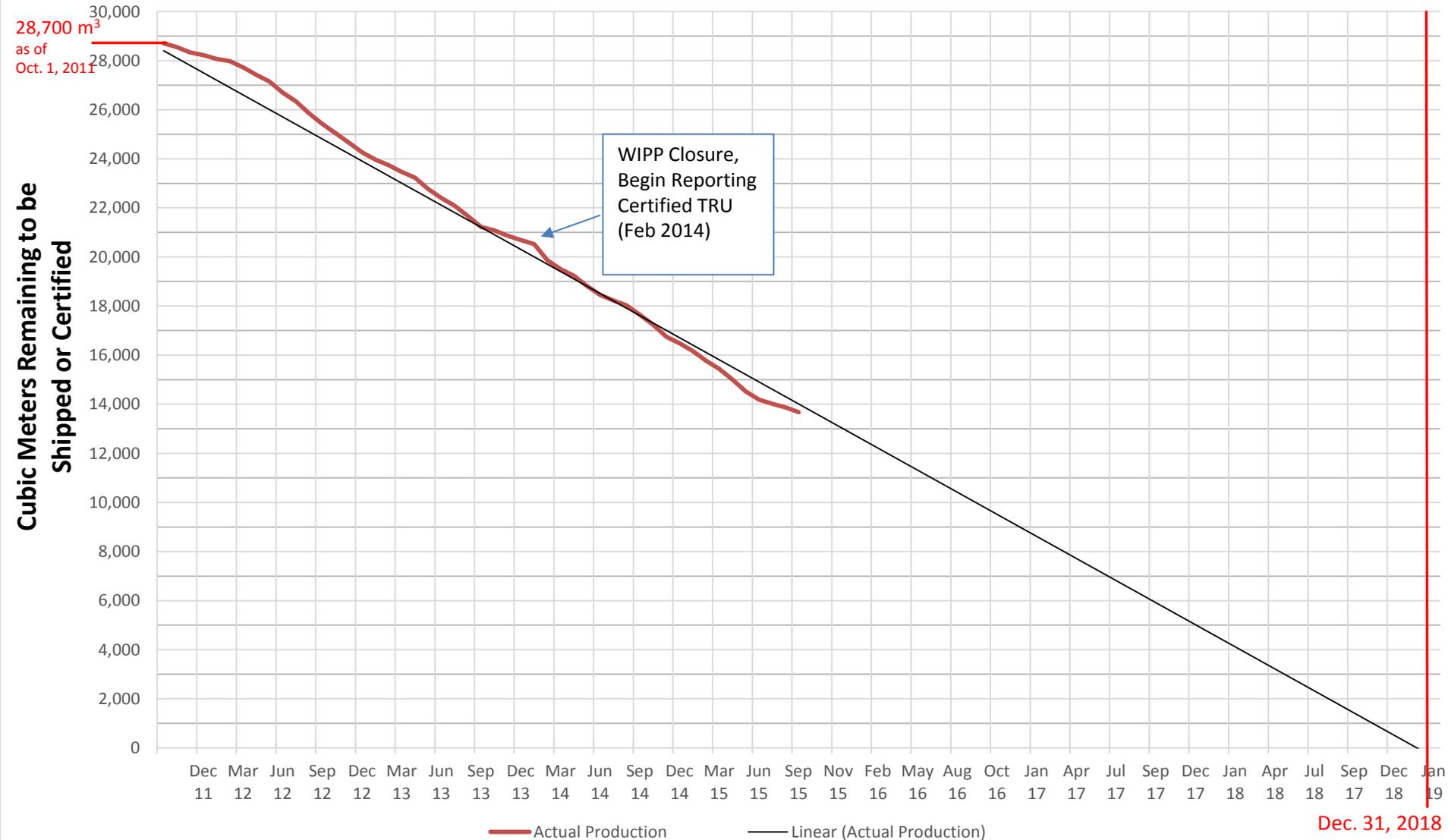
Ben Roberts

Operations Activity Manager

Advanced Mixed Waste Treatment Project

October, 2015

Current Production Status



Dec. 31, 2018

FY2016 Scope Overview

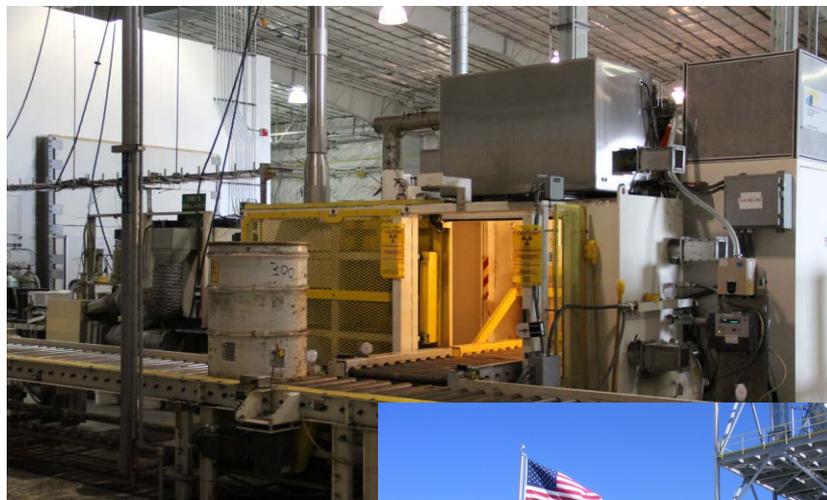
Goal: Utilize FY2016 operations to address the current challenges that are impacting production, and provide optimal condition for upcoming ICP Core Contractor to complete AMWTP mission.

Priorities:

1. Accelerate and Complete Retrieval
2. Continued Unloading of Cargo Containers
3. Infrastructure Improvements
4. Acceleration of Characterization to Increase Production Feed
5. Additional Waste Processing

Other Activities:

- Treatment Facility
- Characterization
- TRU Certification and Storage
- MLLW Shipping



Retrieval Acceleration



TSA-RE Pad 2 Drum Face Summer 2003



TSA-RE Pad 1 Drum Face September 2015

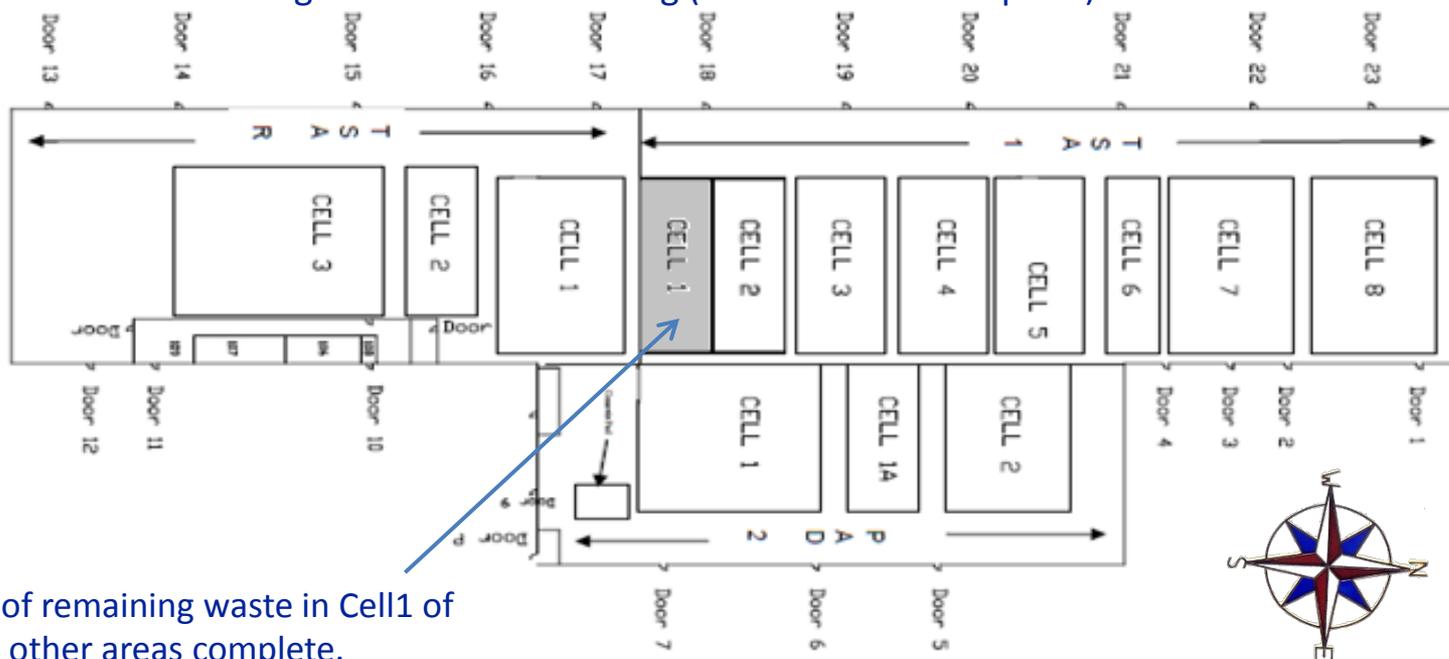


TSA-RE Pad 1 Cell 1 and
Cell 2 Drum Face February 2015

All soil, boxes, and drums from picture on left have been retrieved on the picture above.

Retrieval Acceleration

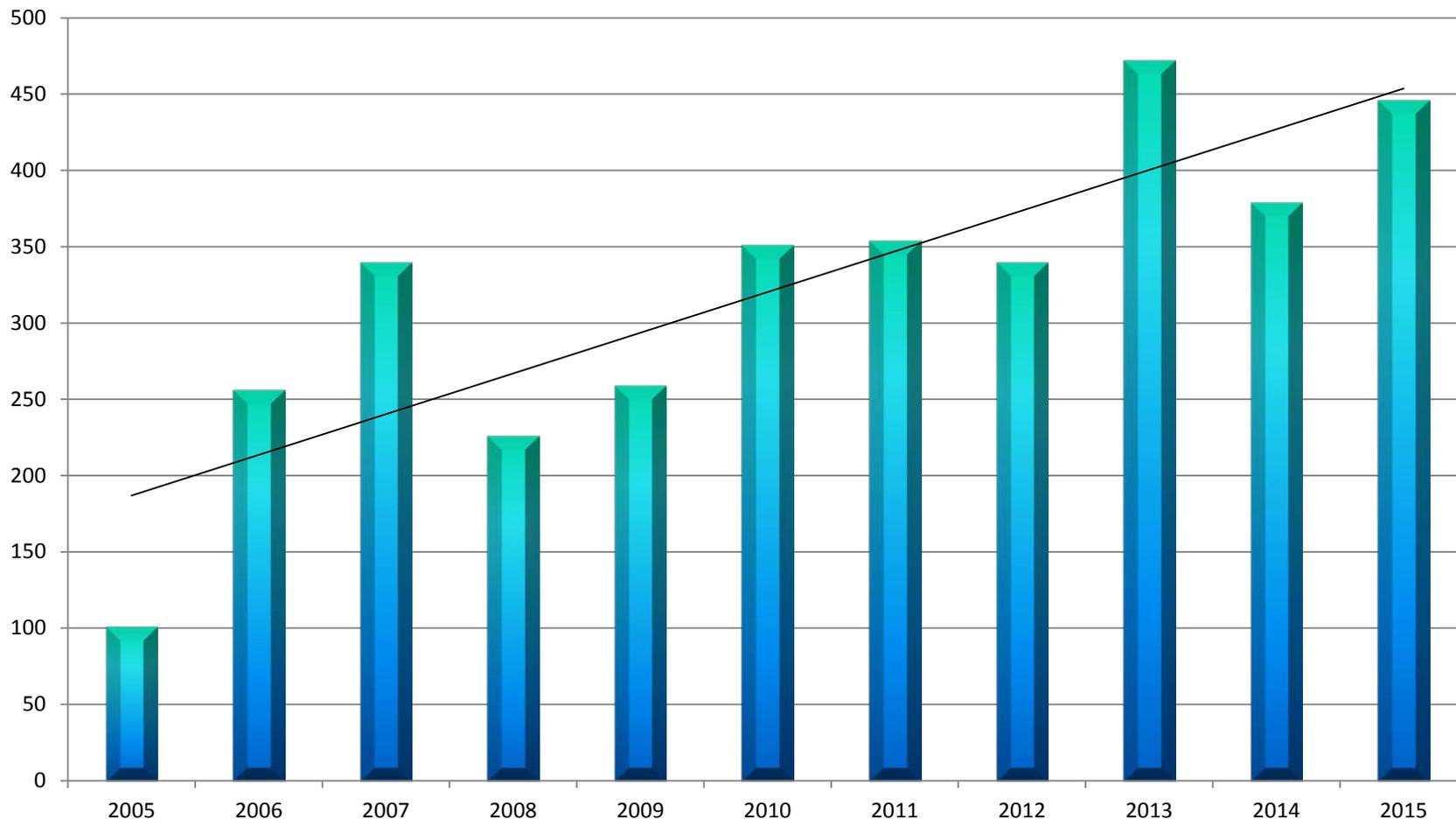
- Cost/Schedule
 - \$25 million
 - Complete by September 30, 2015
- Benefits
 - All Waste Available for Feeding Treatment Process (i.e. SRP, TF)
 - No Additional Surprises from Retrieval
 - Containment Available for Installation of New Treatment Processes
- Retrieval Acceleration Scope
 - Complete Retrieval of All Remaining Waste
 - Continued Cargo Container Unloading (est. 90 of 105 complete)



Location of remaining waste in Cell1 of Pad 1, all other areas complete.

Treatment Facility Infrastructure Improvements

Increasing Trend of Cell Entries



Treatment Facility Infrastructure

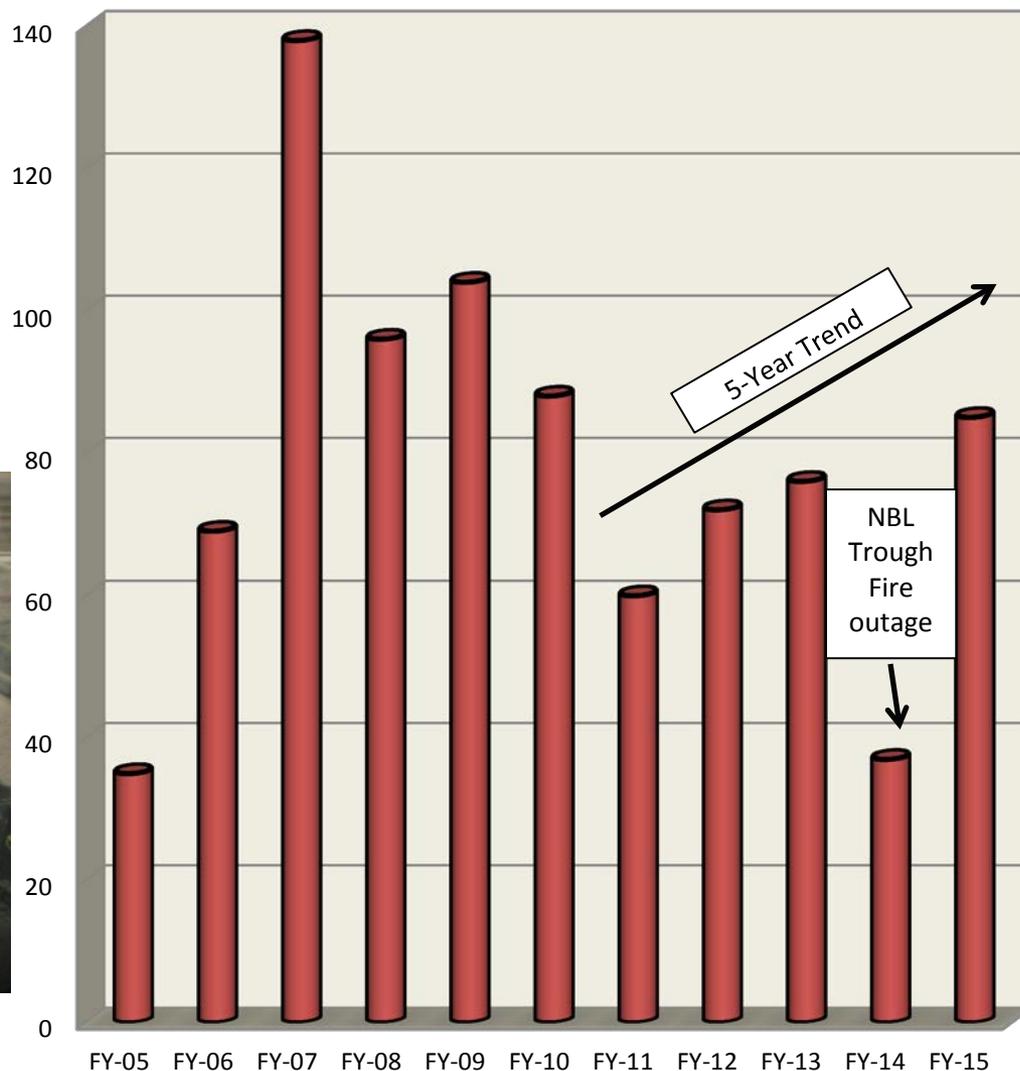
BROKK Systems

- Current BROKK System
 - BROKK 330 Floor Mounted Hydraulic Manipulator
 - Installed in 2005
 - Design 20+ Years Old
 - Replaced by 400 Model World-Wide
- Modification of 330 design have temporarily reduced failure rates.



The North-West BROKK with a Broken #2 arm laying on it's side across the trough

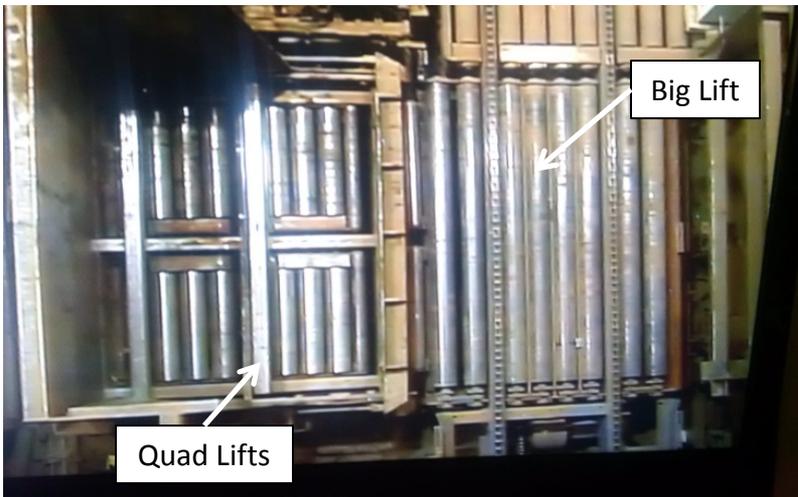
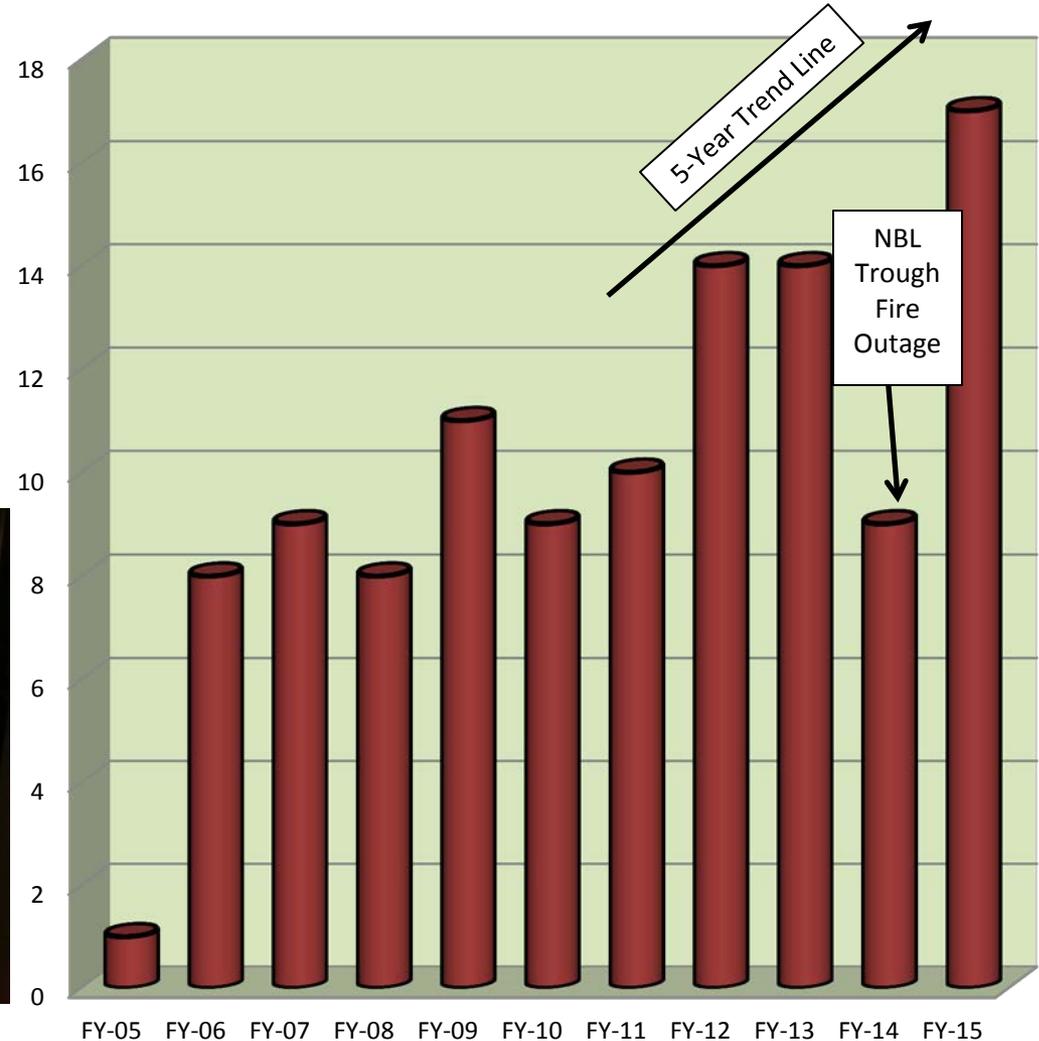
Brokk Repairs by Fiscal Year



Treatment Facility Infrastructure Box Conveyor Lift Systems

- Handles all incoming feed for the Box Lines.
- Specialty lifts used to transfer the boxes off of the chain conveyor and into carriage for delivery to a sorting trough.
- Lifts have had increased failures due to extensive wear on hydraulic systems.
- Breakdown disrupts feed to one or both of the Box Lines.

Main Box Conveyor System and Boxline Lifts Breakdown by Fiscal Year



South Boxline Big Lift and Quad Lifts

Treatment Facility Infrastructure Improvements

- Cost/Schedule
 - \$8 million
 - ~6 month duration complete during FY2016
- Benefits
 - Improved facility reliability – Quick Recovery of Operations, Less System Downtime, Less Fewer Cell Entries, Lower Worker Risk, etc.
 - Increased capability – Expanded System Capacity
- Treatment Facility has been backbone of the AMWTP efforts for 10+ years.
 - Replacement Cost – In Excess of \$1.0 Billion
 - 31,324 m³ processed
 - 10,607 boxes sized reduced
 - 216,054 compactions performed
- As the plant ages, investment in updating and upgrading critical systems is required to maintain capability to finish current mission and provide capability for future missions.
 - Maintenance keep aging and obsolete systems functioning continues to increase.
 - Maintenance repairs carry risks to personnel and costs for the protective equipment due to high contamination levels.

Treatment Facility Infrastructure

Other Systems

- Infrastructure Improvement plan targets key systems with indications of end-of-life failures or which have reached or passed obsolescence.
- New Systems:
 - 2 BROKK Robotic Arms
 - Improved Facility Airlock Doors
 - Improved Conveyor Lifts and Quads
 - Waste Drum Conveyors
 - Robotics Computer
 - Box Opening Gantry Robot
 - Facility Chillers
 - Newly Designed BROKK Shear Tool
 - Savannah River Site Box Assay
- Major System Repairs:
 - Supercompactor Main Seal Replacement
 - Shredder Auger Replacement
 - Main Plant Air Compressor
 - Box Clamping Frame Upgrades
 - Camera System Upgrades
 - Crane Controller Upgrade
 - RTR Cooler Upgrade
 - Facility Ventilation System Upgrades



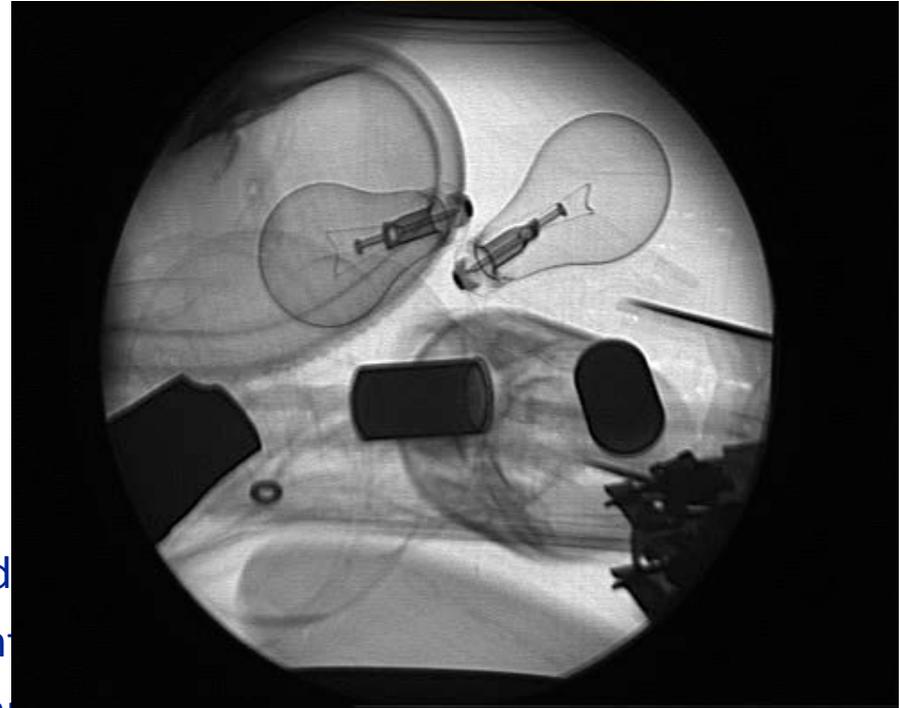
Box Opening Gantry Robot



Shredder Auger

Acceleration of Characterization

- **Benefits**
 - Increased Feed Available for Treatment Processes
 - Increased Control Over TRU Certification
 - Increased Efficiency by Eliminating Duplication
- **Characterization Scope**
 - Characterize Backlog Waste
 - Add New Waste Streams to Available Feed
 - Completion of Waste Stream Development
 - Transfer of Certification to AMWTP Program
 - Increases Available Feed for Treatment and Certification to Ensure Facilities can be Operated Efficiently to Quickly Work Off Remaining Inventory



Real Time Radiography of a 55 Gallon Drum

Additional Waste Processing

- Benefits
 - Utilizes Excess Facilities (ARP V and ARP VII)
 - Continues Very Successful Sludge Repackaging Project (SRP)
 - Utilizes Experience from ARP Operations to Address Roaster Oxides
 - Creates Additional Feed for Treatment Process
- Additional Processing Scope
 - Repackage and Treat Sludges in ARP V
 - Implement Process and Treat Roaster Oxides in ARP V
 - Implement Process and Repackage Boxed Debris in ARP VII



Sludge Processing in ARP V

