

Dennis Carr

Site Project Director

Fluor-B&W Portsmouth LLC

Scope of Work

- Dismantling and disposal of Gaseous Diffusion Plant facilities
 - 3 large process facilities
 - More than 300 support facilities
- Clean up contaminated soil
- Ensure effective groundwater remediation
- Assess existing closed/capped landfills
- Leave site in a condition that supports community's vision





- Bringing site workforce formerly under NRC regulatory authority back under DOE oversight

Lessons Learned

- Developing a DOE site safety culture by rallying workforce around D&D mission
- Incidents that show gaps but drive safety improvements:
 - Crane incidents
 - Electrical pole strike
 - Chlorine odor

Lessons Learned



Priorities & Actions



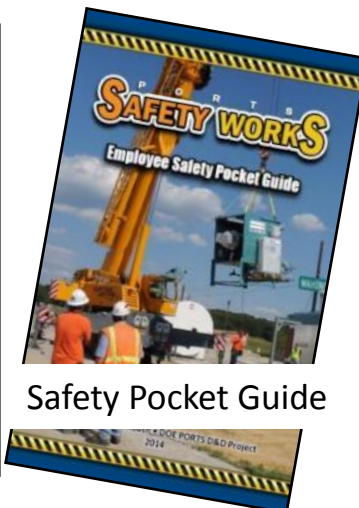
- Using National Safety Council Survey to strengthen safety culture
- ISMS Phase 2 Verification
- Increased safety communications & involvement
 - Company Employee Safety Team
 - Daily Safety Sheet
 - Safety Pocket Guide
 - Health & Safety Fair



Company Employee Safety Team



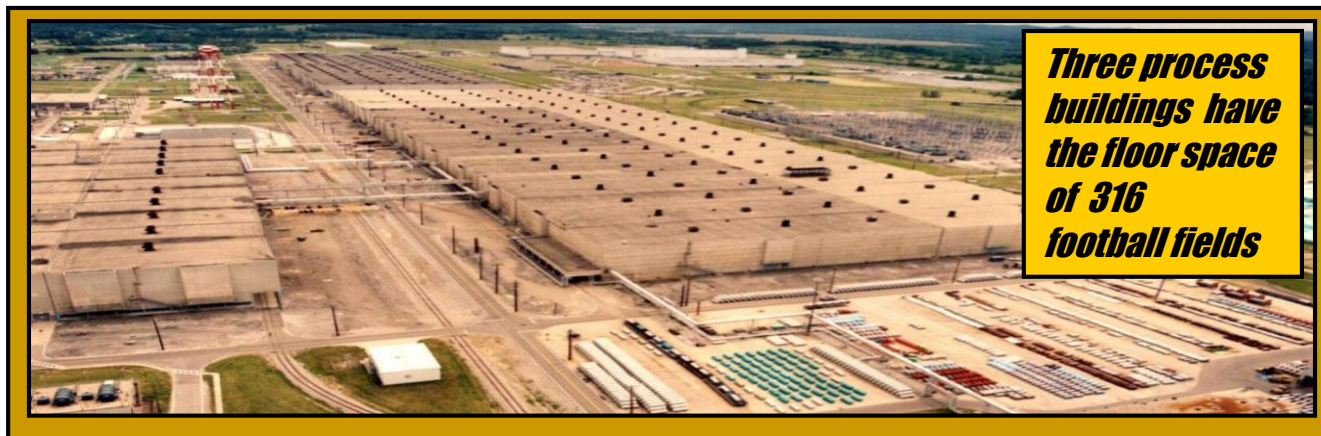
Daily Safety Sheet



Safety Pocket Guide

Issues

- 65 year-old facilities with 145 acres under roof
- 22 Haz Cat 2 facilities
- Deteriorating roofs in former processing buildings and material storage areas
- 2.2 gigawatt electric grid excessive for D&D mission and future use but part of national electric grid
- Sewage treatment facilities + other utilities with single points of failure
- Safety systems—extensive/must be maintained until facilities can be vacated or demolished



Priorities & Actions

- Repair/replace critical components
 - Autoclaves & cranes
 - Sewage treatment plant equipment and lift stations
 - Water treatment plant sanitary water pumps/mixers
 - Maintain a variety of 50-year-old HVAC systems

- Eliminate single point failures in infrastructure systems (i.e., System Health Report)

- Evaluate maintenance practices for further efficiencies



Water Treatment

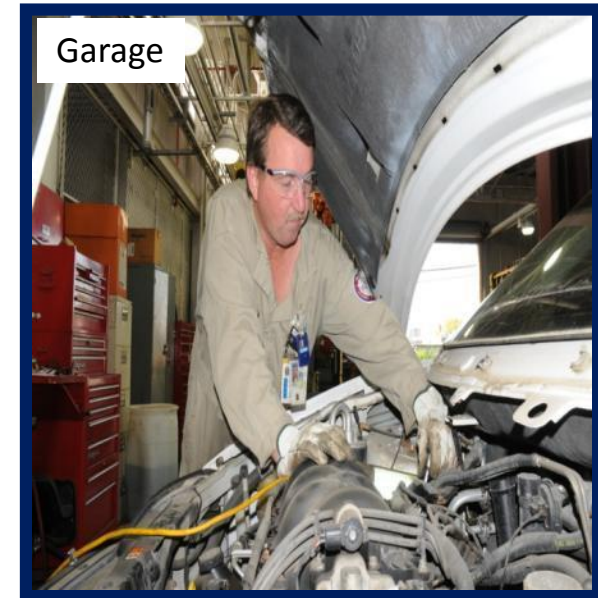
System Health Report

PARAMETER MEASURED	CRITERIA	MEASUREMENT	RATING	COLOR	MINIMUM AVAILABILITY	ACTUAL	COLOR	ACTUAL	COLOR
OVERALL SYSTEM									
MATERIAL CONDITION									
X-330 #6, #8 & #9 Comp. (5.0 KSCFM)	Daily Avg. No. Avail.	2.7 or more	2.4 to 2.6	2.6 to 2.3	0 to 1.9	100	White	100	White
X-330 #7 Comp. (0.8 KSCFM)	Daily Avg. No. Avail.	0.9 or more	0.75 to 0.89	0.65 to 0.74	0.00 to 0.64	100	White	100	White
Diesel Comp. (7.0 KSCFM)	Daily Avg. No. Avail.	1.8 or more	1.5 to 1.7	1.3 to 1.5	0 to 1.3	100	White	100	White
General X-330 Electric Compressor	Avg. Capacity (KSCFM)	17.6 or more	12.8 to 17.5	10.0 to 13.7	1.1 to 2.0	100	White	100	White
X-470 #1, #2 & #3 Air Comp. (3.8 KSCFM)	status	Excellent	Good	Fair	Poor	100	White	100	White
X-470 #1, #2 & #3 Air Dryers (3.8 KSCFM)	Daily Avg. No. Avail.	2.7 or more	2.4 to 2.6	2.0 to 2.3	0 to 1.9	100	White	100	White
Avg. Daily Capacity of X-470 Electric Compressors	Avg. Capacity (KSCFM)	2.7 or more	2.4 to 2.6	2.0 to 2.3	0 to 1.9	100	White	100	White
Cooling Water Availability	status	Excellent	Good	Fair	Poor	100	White	100	White
General X-470 Equipment Condition	status	Excellent	Good	Fair	Poor	100	White	100	White
Recovery/Improvement Plan	status	Excellent	Good	Fair	Poor	100	White	100	White
CONDITION MONITORING									
Adverse Trends	Adverse Trend	none	manageable	unmanageable	production limiting	100	White	100	White
	Adverse Trend	none	manageable	unmanageable	production limiting	100	White	100	White



Priorities & Actions

- Implemented 5-5-5 Plan
 - Charter: 5 people/5 months/\$5 million savings
 - Identified \$13.5 million in annual savings
 - Reassigned 91 employees to higher priority site work
 - Reduced active PMs 23% and corrective maintenance by 64%
- Laundry/Respirator services subcontracted saving \$1M annually
- GFE vehicles converted to GSA. Garage performing GSA maintenance saves \$230K annually
- X-710 Laboratory outsourcing in progress
 - Additional cost savings when Lab and other buildings vacated



Lessons Learned

Issues

- Oversized infrastructure built to operate three production buildings
 - 13 miles of underground cable supporting site buildings
 - Sewage treatment plant daily capacity of 600k gallons (200% of current need)
- Infrastructure system not designed to support D&D activities

Priorities & Actions

- Repair or replace old roofs
- Install enclosure around new Boiler Plant
- Reduce sanitary water usage by 38% to support conversion to public water supply
- Transfer facilities to new 13.8kV distribution system
- No significant demolition until first process building vacated

Lessons Learned



Scope

- Operate and manage the Uranium Barter Transfer Program – mission critical
- Support nuclear decontamination and uranium downblending operations
- Support D&D through component sampling and processing
- Manage and process the accountable nuclear inventory at the site
- Complete the nickel recovery bench scale evaluation





Issues

- Uranium Barter Operations
 - Old facility & challenging to maintain
 - Operations personnel have met production goals to support 2,400 MTU per year
 - Uranium Barter Program
 - 70 % of site funding relies on this operation
 - Safety performance – excellent!

Priorities & Actions

- Ash and Gunk
 - Perform cost/benefit analysis on processing material on or off site
 - Complete processing by Sept. 30, 2014
- Complete installation and start-up of cold boxes for heel cylinder processing



Scope

- Remove Process Gas Equipment (PGE)* to achieve Criticality Incredible condition and to support “cold and dark” status
- Remove Hazardous Waste and accountable nuclear material
- Characterize non-process gas and structural components for disposal
- Remove asbestos containing materials
- Utility isolation & redistribution



Cut & Cap Operations in X-326 Building



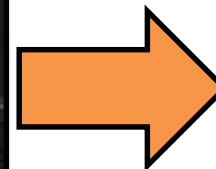
* This work is being done under an Ohio EPA-approved RI/FS Sampling Analysis Plan (SAP).



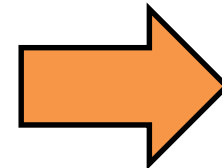
Issues

- Safety – high-risk work
- Non-Destructive Assay (QSNDA)
 - In-situ NDA to Characterize to Open to Atmosphere
 - Ex-situ NDA to Characterize for Transportation/Disposal
- Equipment Size & Weight
 - Hoisting & Rigging
 - Tight Work Spaces
- Aging Infrastructure (Cranes, Elevators, etc.)
- Hydrogen Fluoride and Nitrogen Dioxide Emissions

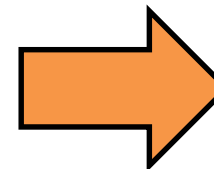




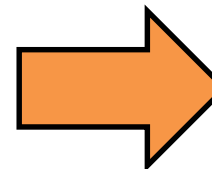
Cell components are housed within heated enclosure
for temperature control



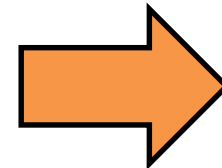
Hatch covers removed to allow access to the converters



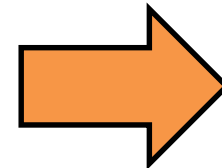
Converter detached from the Interconnecting piping using a carbon arc torch



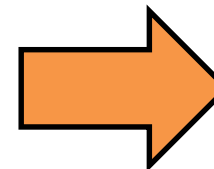
The converter lifting fixture is lowered into place by the overhead bridge crane and attached to the converter



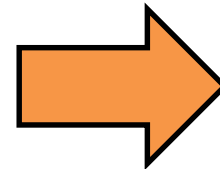
Converter is raised from the cell using the crane



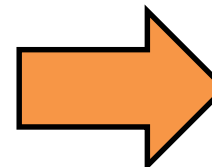
Once removed from the cell housing, the converter is moved to a transfer cart



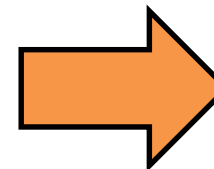
Metal plates are welded to secure the openings and the converter is decontaminated as necessary



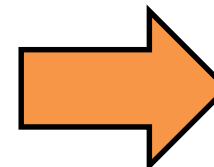
Converter is lowered to the operating floor



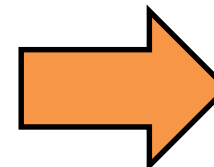
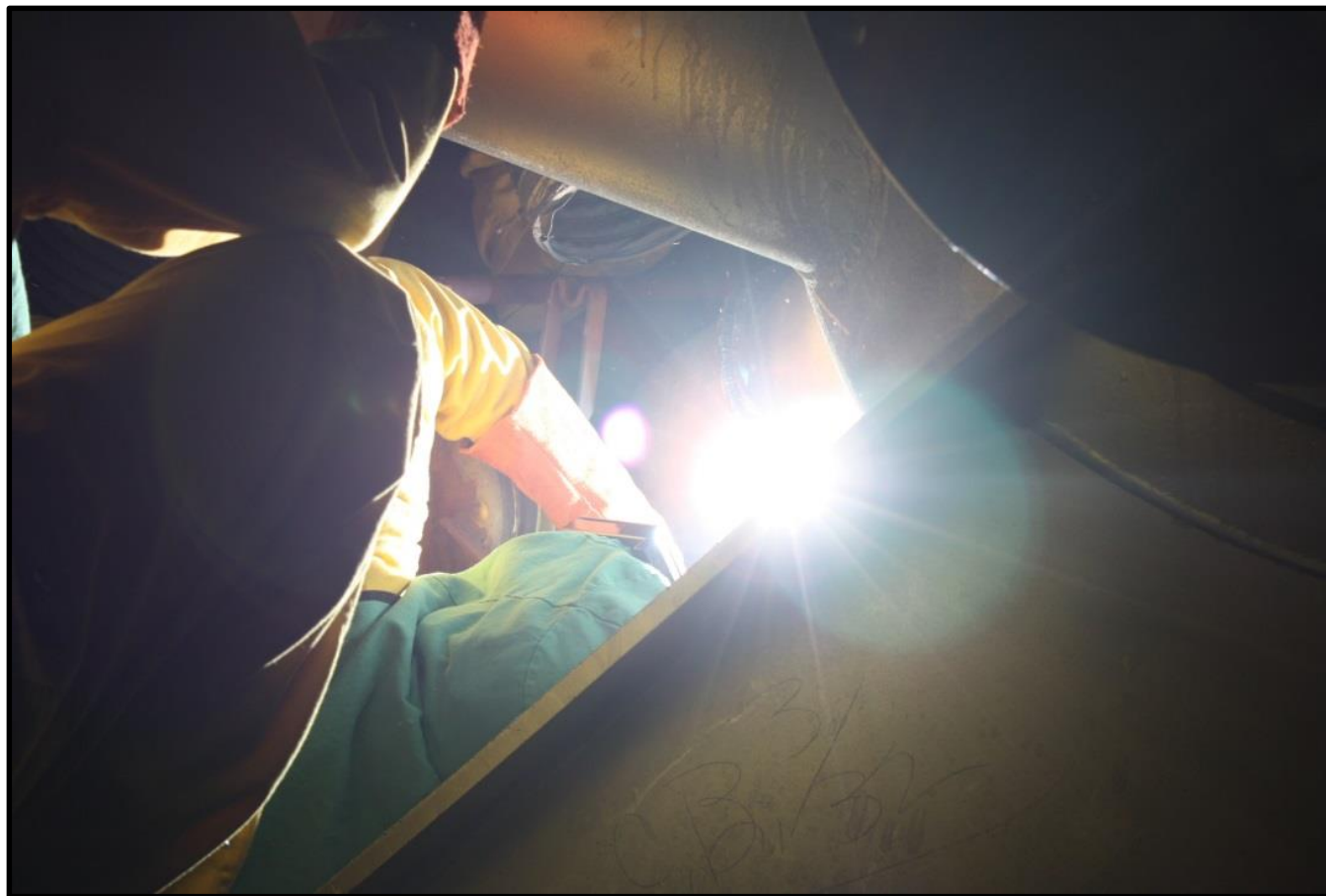
Converter is placed in soft-sided shipping bag
for storage prior to shipment



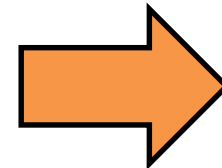
Compressors are housed within a heated enclosure for temperature control



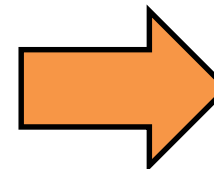
Enclosure is removed for easy access



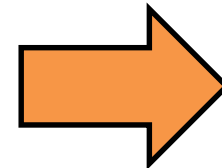
Compressor detached from interconnecting piping using a carbon arc torch



Metal plates are welded to secure the openings

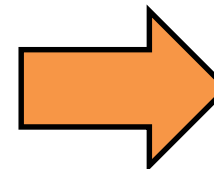


Compressor is lifted from the cell housing



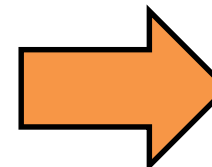
The compressor is lowered to the operating floor

Cut & Cap

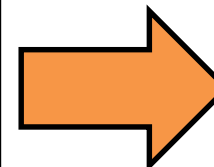


The compressor is secured in a soft-sided shipping container for storage prior to shipment

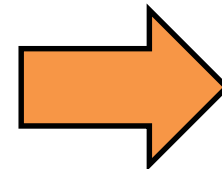
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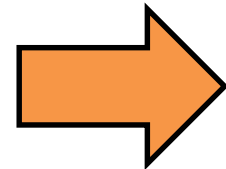


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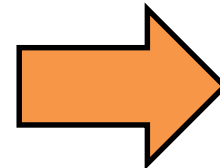
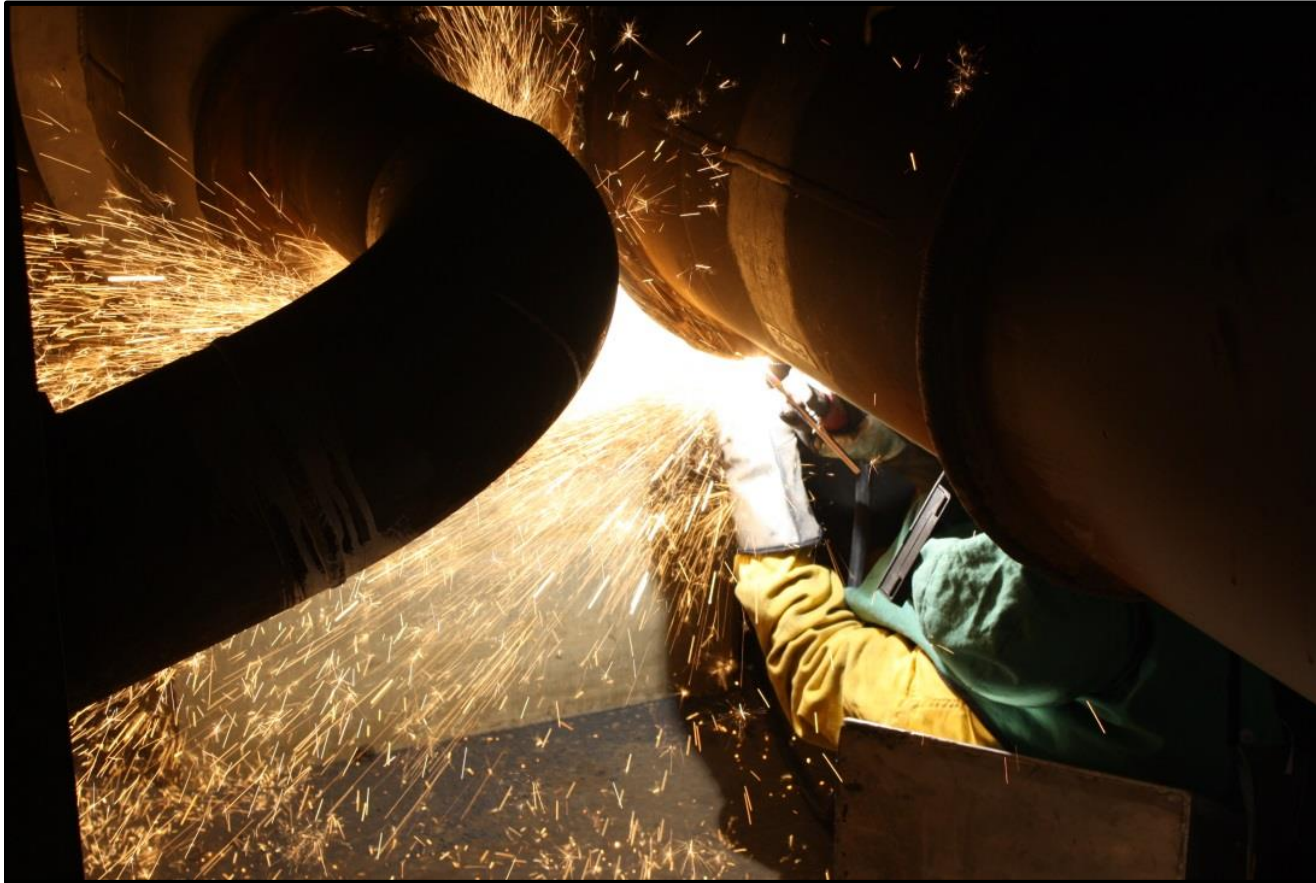


Interconnecting piping is cut into sections using a carbon arc torch

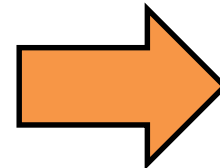
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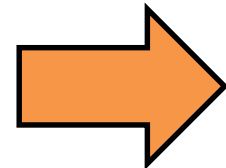
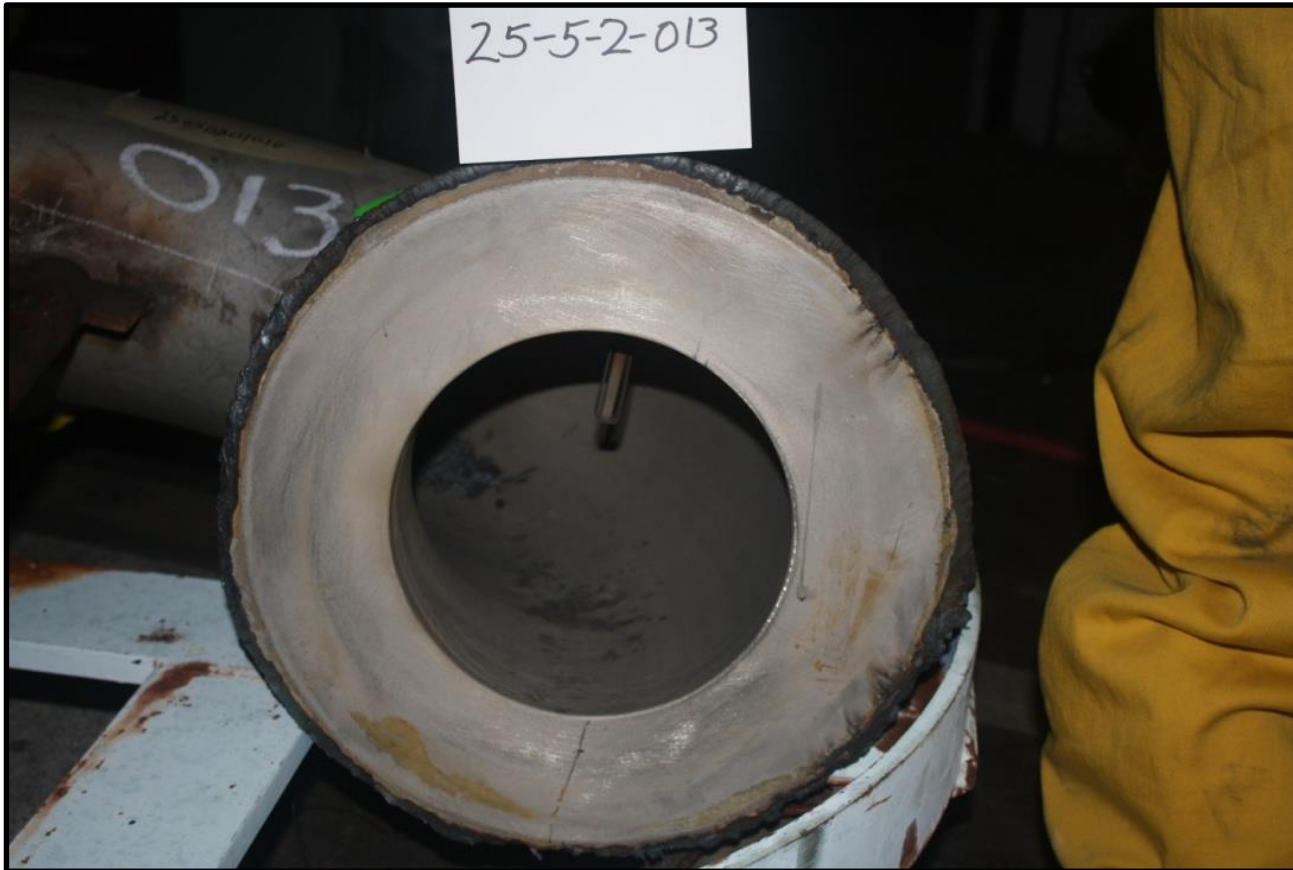
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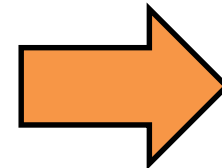
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A range of internal conditions can be seen in these pipe sections

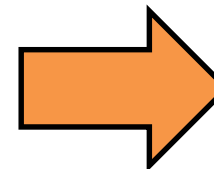
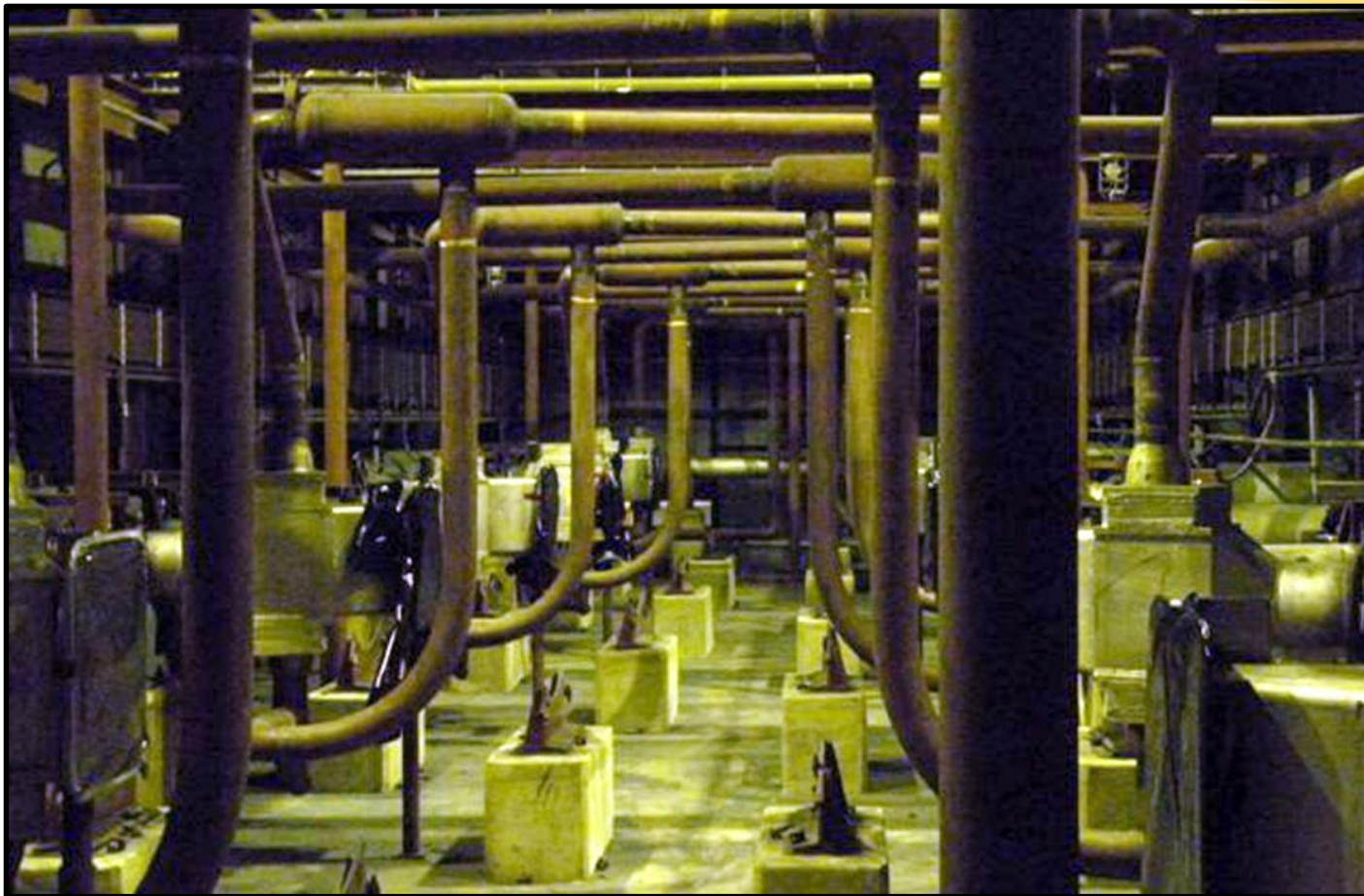


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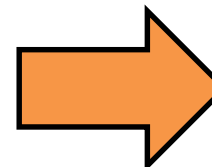
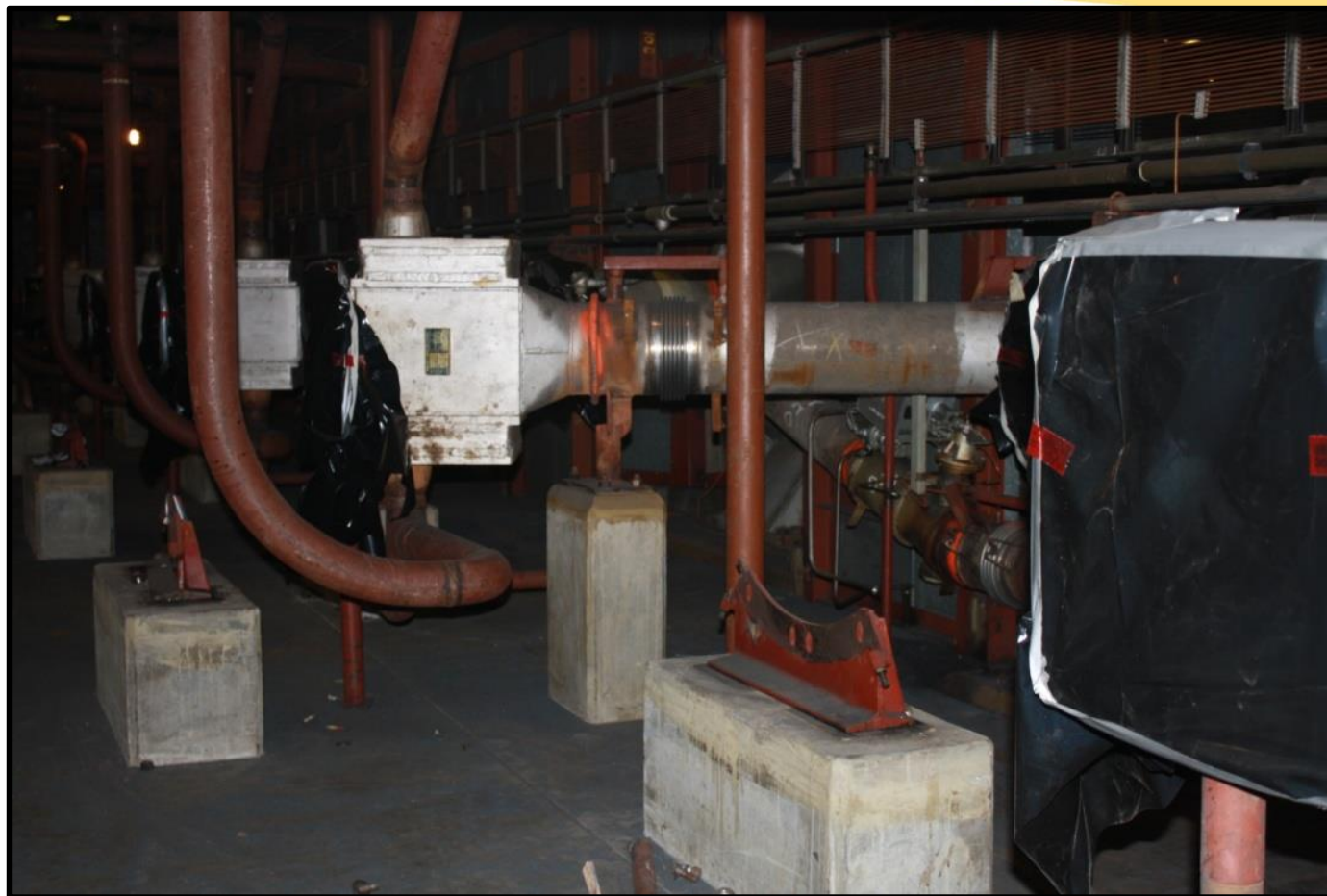


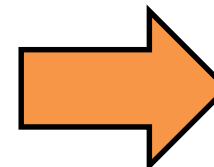
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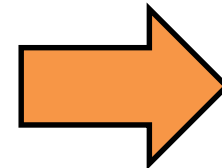


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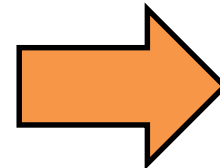




Process gas cooler being removed from
the Freon and process gas systems



Process gas cooler being removed from
the Freon and process gas systems



View of empty cell following removal of all process equipment



Scope

- Disposition legacy & waste/material generated by the D&D project.
- Recycling



Lessons Learned





Issues

- PGE components
 - Most (>90%) are expected to be transportable as fissile excepted and require NDA measurements
 - Generation and management of data under the QSNDA program is the major issue in disposition
 - Legacy waste
 - Inventory has been greatly reduced, but the most difficult material remains
 - Lot 14
 - Legacy UF6 trap material

Lessons Learned

Priorities & Actions



- Expand the population of fissile excepted components through sampling and NDA
- Support shipment of 2,300 components (500+ shipments) or 70 cell equivalents
- Reduce legacy mixed waste inventory to meet the Site Treatment Plan
- Complete the processing, packaging, and shipment of the remaining USEC legacy material
- Complete shipment and disposal of 500 MTU of former uranium sales material





- Complete site soil characterization and establish background conditions in support of attaining a remedy decision for any identified soil contamination
- Signed RODs in place this year for demolition and waste disposal and next year for soil remediation

