

# DUF6 Project

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**PRESENTED BY**  
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*Babcock & Wilcox Conversion Services*



# MISSION

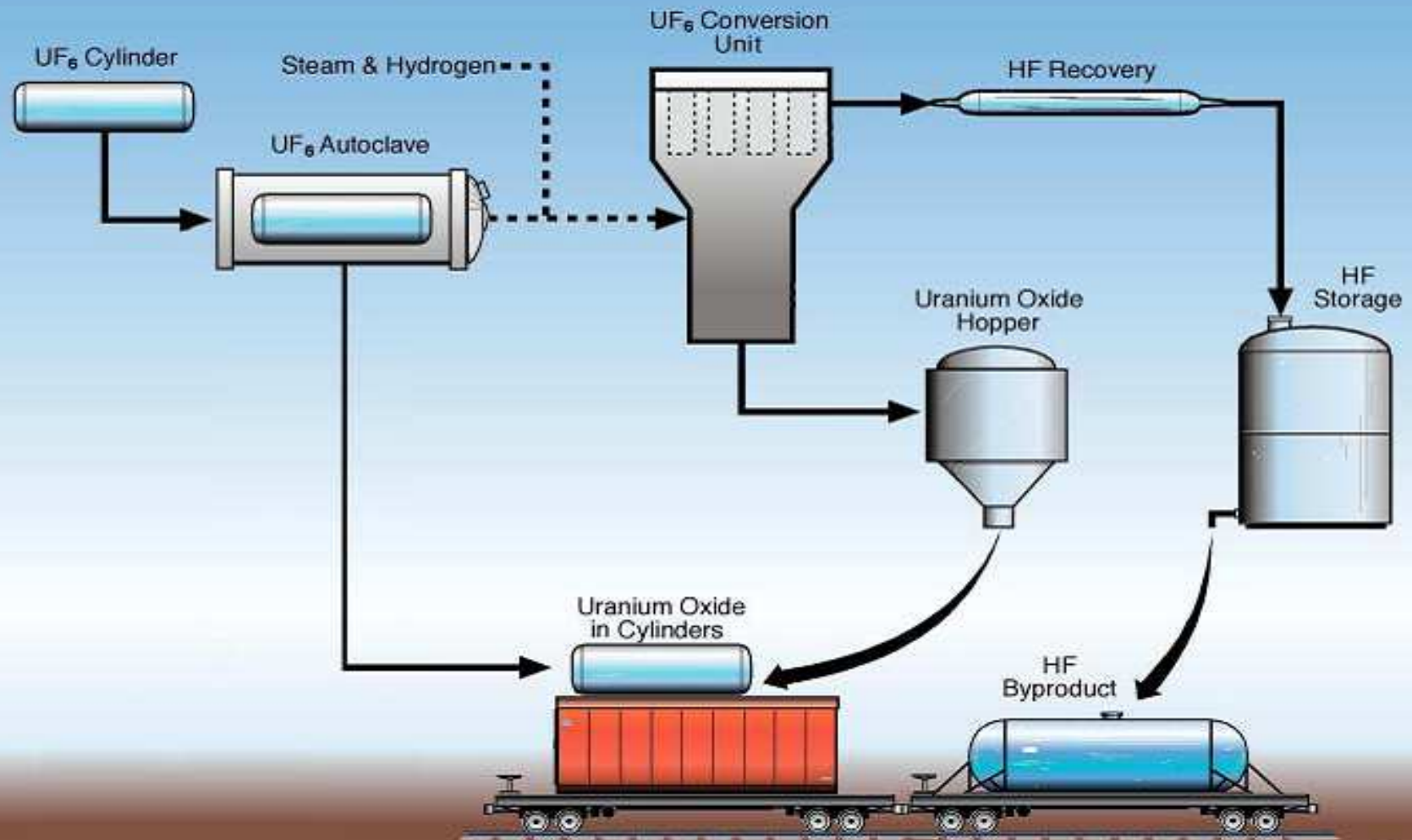


21,000 cylinders of DUF6  
(245,000 Metric Tons)  
Mission life of ~18 years  
Three lines – six conversion units



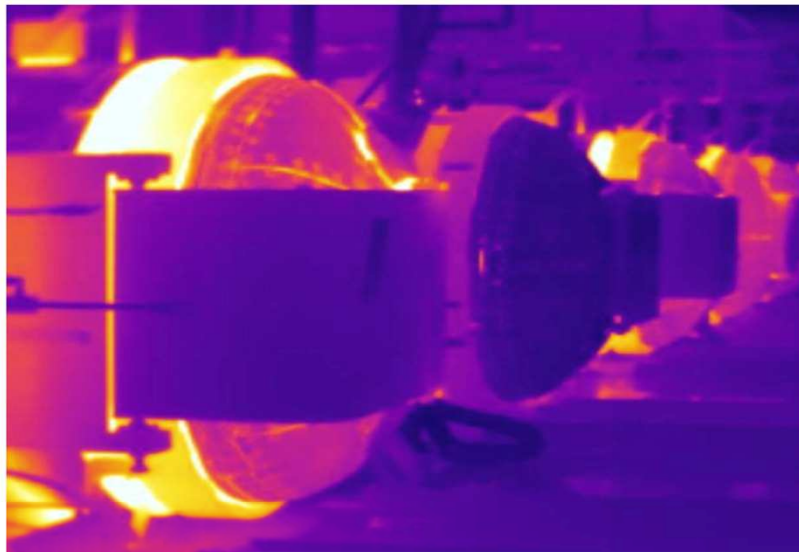
36,000 cylinders DUF6  
(440,000 Metric Tons)  
Mission life of ~25 years  
Four lines – eight conversion units

# DUF<sub>6</sub> Conversion Process



## FY 2012

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- All lines ran simultaneously for extended periods SAFELY
- Reached production goal of 6109 MT
- Total production:

Paducah	2800 MT
Piketon	3400 MT

# FY 2013 OPERATING STRATEGY



**Optimal, stable, sustainable throughput has not yet been determined.**

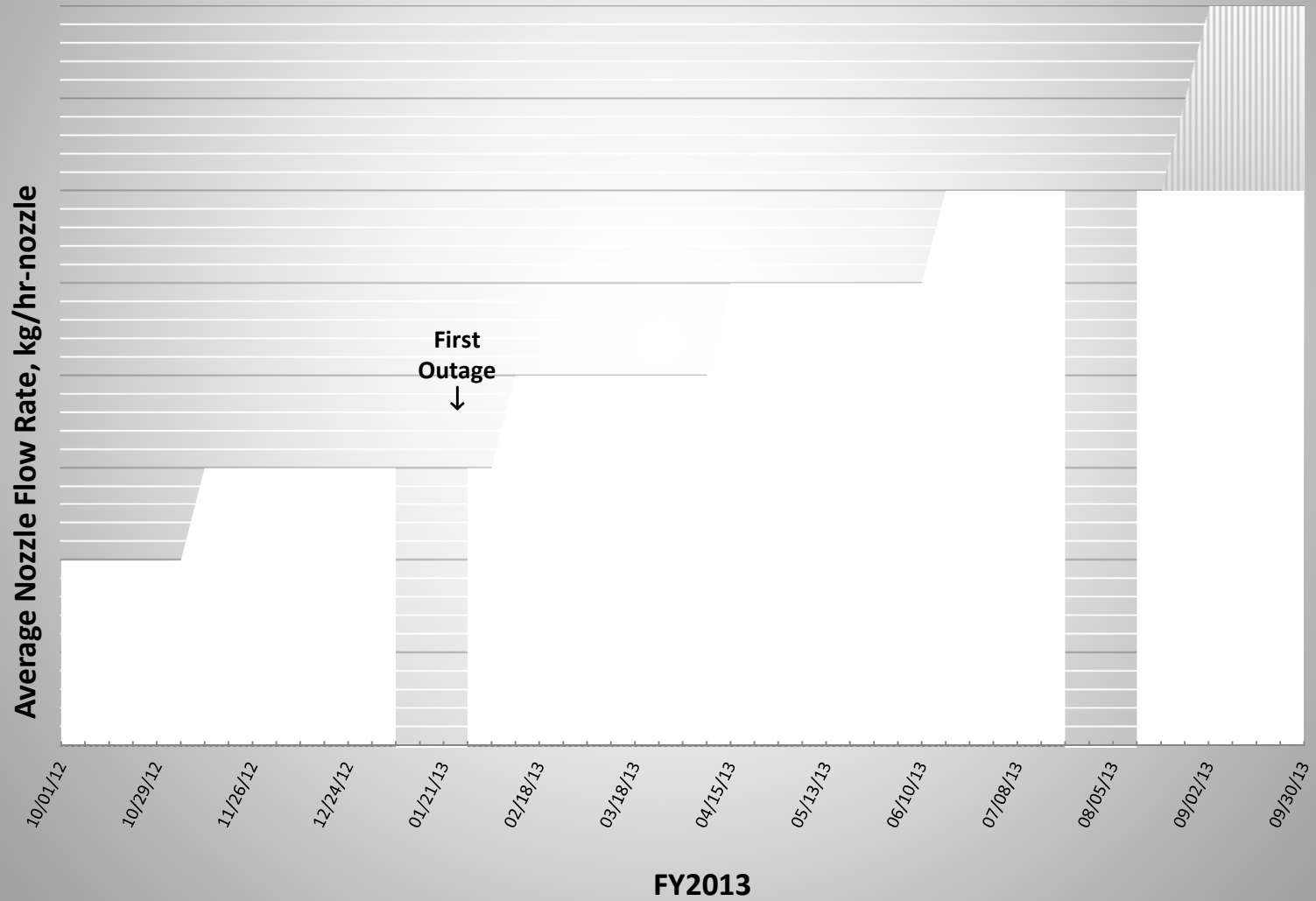
***The FY 2013 Operating Strategy is designed to define it.***

# FY 2013 OPERATING STRATEGY

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- A phased approach of small, incremental throughput increases, followed by steady state operations
- A comprehensive collection and evaluation of plant data
- A controlled process for identifying and resolving design and operational issues, and ultimately for identifying the optimal stable, sustainable throughput



# CHALLENGES

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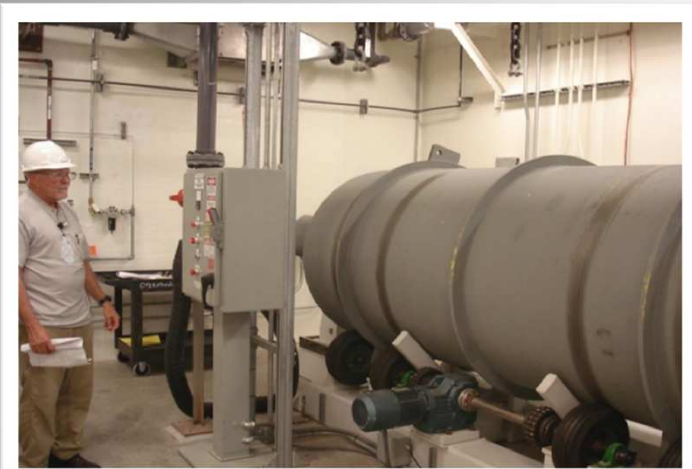


- BWCS must identify the optimal stable, sustainable throughput.
- Conflict between plant availability and identification of plant limitations.
- Basic Process Control System
- Oxide powder sampling protocol needed for process optimization
- Limited time and opportunity for modifications.
- Coordination, integration, and technical sharing between the two plants is essential



# TECHNICAL PRIORITIES

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- Process Offgas Blowers
- Conversion Process Optimization
- Oxide Transfer Issues
- Distributor Plates
- Nozzles
- Rotary Valves
- Material Handling (cylinder movement)

# MODIFICATIONS

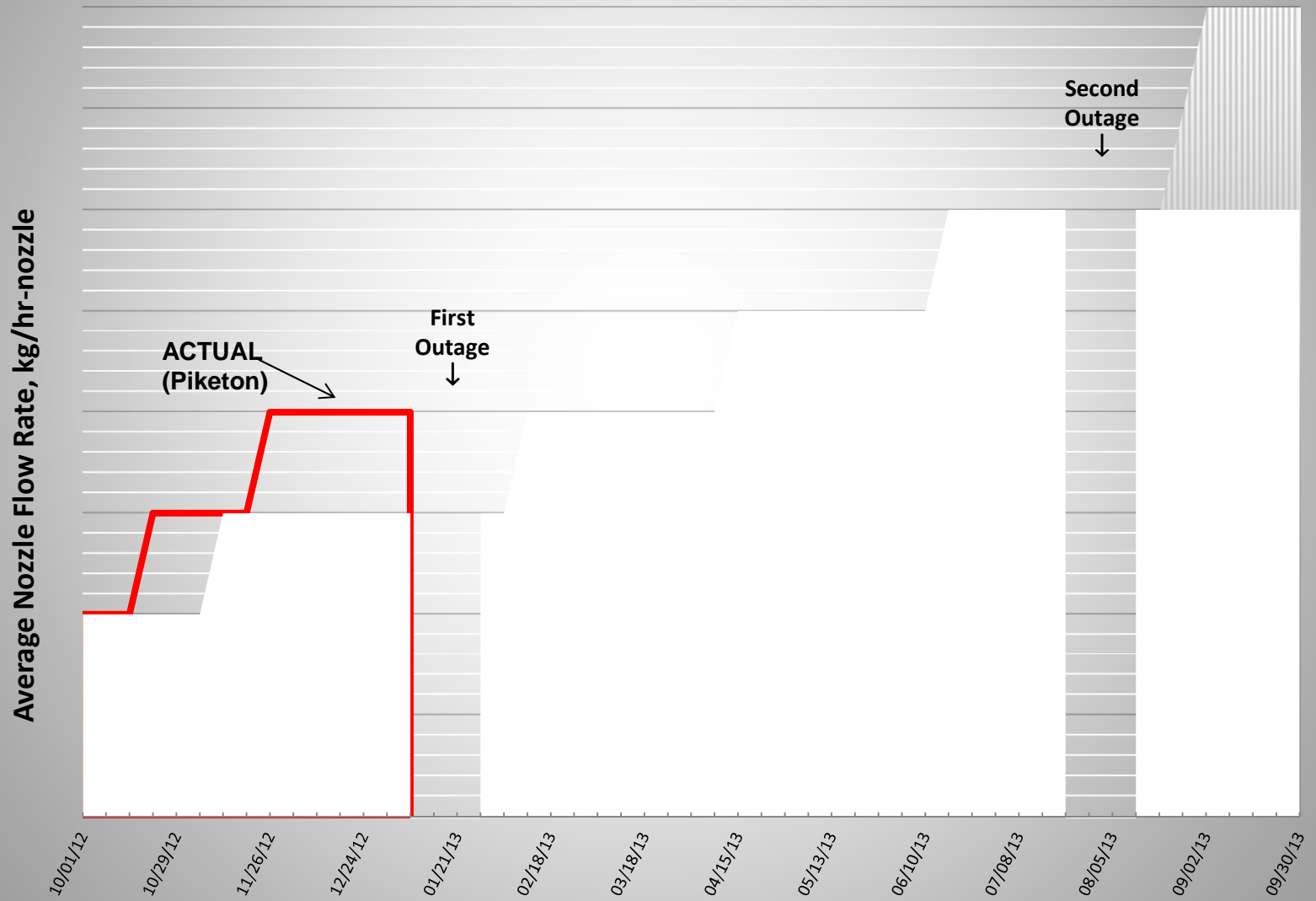
## Current



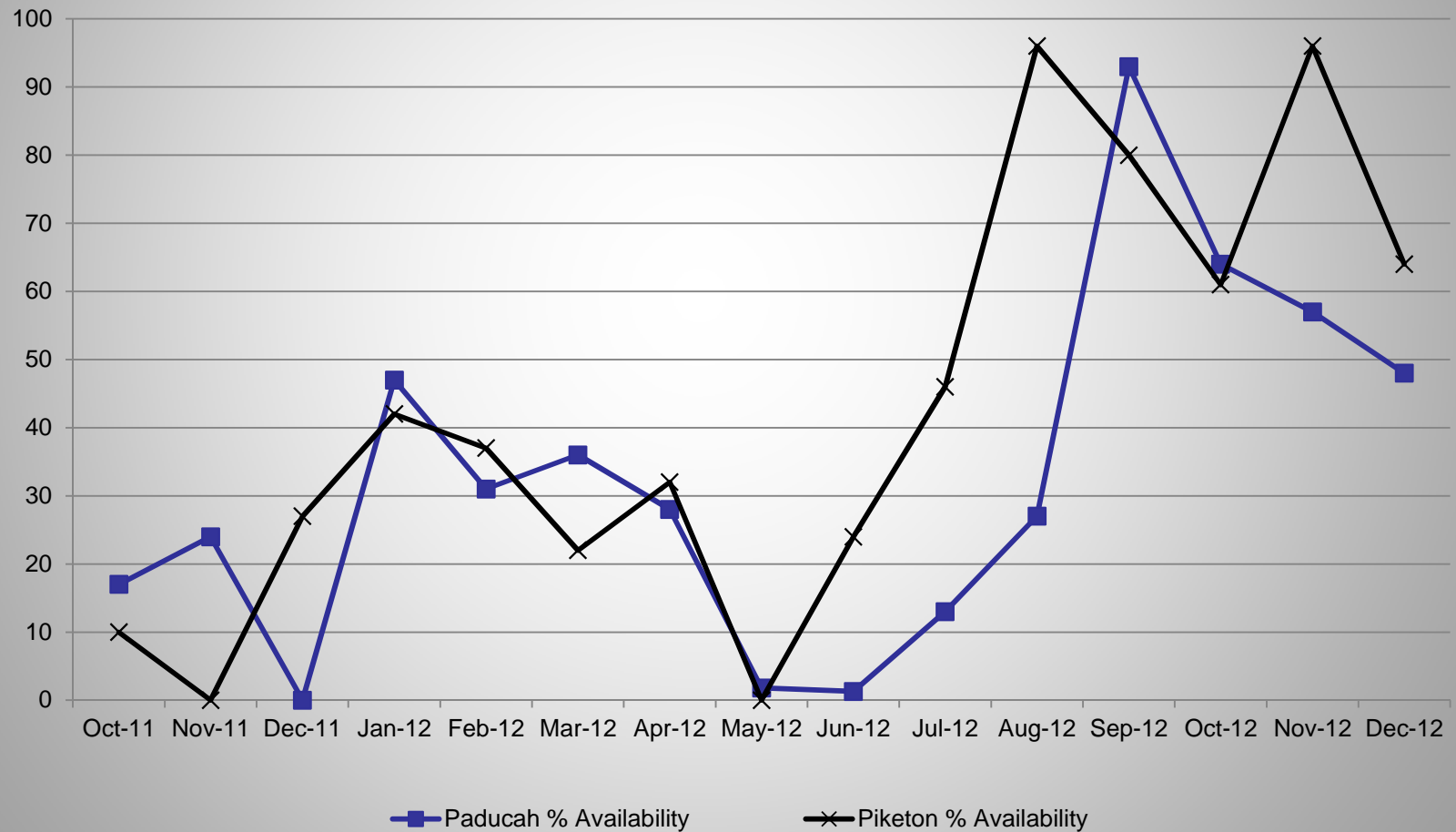
- Process Offgas System isolation valves
- Autoclave Isolation valve limit switch modification
- De-ionized Water makeup to Backup Scrubber
- De-ionized Water spray to Backup Scrubber blower
- Steam boiler isolation
- Power filters

## Modifications under consideration

- Steam flow transmitters
- Fluidizing steam isolation
- Deionized Water flush to Primary Scrubber blowers
- Isolation valves for HF drain lines
- Transfer Drum vents
- Vacuum pump / DUF6 feed line re-design
- Hydrogen accumulator



# PLANT AVAILABILITY



## 2013 GOALS

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Metric Tons DUF6 processed

Paducah FY2013

7352 MT (projected)

2045 MT (1<sup>st</sup> four months)

Piketon FY2013

5513 MT (projected)

2290 MT (1<sup>st</sup> four months)