Mixed Oxide Fuel Fabrication Facility (MFFF)
MFFF Project Overview

- Baselined in 2008: $4.86B and 2016 completion date
- Cost and schedule growth during construction cycle
- Latest Government estimate: $17.2B and 2048 completion date
- Government Accountability Office found Government estimate reliable
- CB&I estimate is $9.99 B; GAO found this estimate to be unreliable
- DOE committed to removing Plutonium from South Carolina as quickly as possible
- FY 2018 DOE Budget recommends pursuit of alternative approach
MOX Cost Estimate

• DOE and MOX Services cost estimates are significantly different

<table>
<thead>
<tr>
<th>Estimated By</th>
<th>Total Project Cost</th>
<th>Completion Date (CD-4)</th>
<th>Inflation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOE</td>
<td>$17.2B</td>
<td>2048</td>
<td>4%</td>
</tr>
<tr>
<td>MOX Services</td>
<td>$9.99B</td>
<td>2029</td>
<td>2%</td>
</tr>
</tbody>
</table>

• DOE Estimate followed GAO Best Practices and is considered to be reliable – July 2017 GAO Draft Report
  • “This estimate substantially met best practices and can be considered reliable…”

• Primary Differences between the Estimates include
  • Inflation Rates
  • Productivity rates
  • Project duration
  • Obsolescence

• MOX Services latest estimate is similar to their 2012 estimate which GAO determined not to be reliable in their Feb. 2014 report
  • “Contractors proposed estimate for the MOX facility did not meet most best practices for reliability”
Inflation

• **DOE follows GAO practices selecting an index that most closely matches the program to be estimated**
  - GAO specifically states the CPI is a poor indicator
  - DOE data conforms to several industry standards
  - MOX Services identified an appropriate index in their estimate update but chose the general CPI rate – 50% lower

• **Significant impacts will be borne by the Government**
  - GAO 2005 Shipbuilding report stated use of inappropriate indexes accounted for 30% of shipbuilding cost overruns
  - Navy changed their inflation policy to align with the methodology DOE is using

**DOE followed GAO Best Practices, MOX Services did not**
Productivity Rates

• DOE follows GAO Cost Estimating Guide: “it is always better to use actual costs rather than estimates as data sources”
  • DOE estimate based on actual productivity rates
  • DOE peer review indicated MOX Services rates are unrealistic and unachievable

• MOX Services estimate used actual data for two years, then uses forecasted rates that have never been achieved
  • Does not meet GAO practices which require the rationale behind the assumptions and historical data to back up any claims
  • Unit rates in latest estimate have not been achieved to date
  • Projected improvements starting in FY 18 are unreasonable

MOX Services productivity rates are optimistic and unachievable
Schedule

- DOE performed sensitivity analysis – GAO Best Practice

- DOE estimate considers inflation effects during the construction period
  - Perform less work each year with the same budget creating schedule extensions

- DOE estimate considers risk in a time phased manner
  - As risks occur, planned work is delayed and schedule increases

- MOX services did not include time phasing of risks or perform schedule sensitivity analysis

- USACE contract review determined GAO and Defense Contract Management Agency best practices not followed
  - Not resource loaded
  - Incomplete schedule logic
  - Not correlated to the Work Breakdown structure or funding constraints

- MOX services schedule actually finishes in 2031 not 2029

MOX Services schedule portrays optimistic results – USACE report
Obsolescence

- Extended project duration creates high likelihood of equipment problems at start-up
  - High tech electronics operate this plant
  - 20-35 years in a sub-optimal environment
  - Used on previous estimates with significant schedule growth
  - Major construction industry partners agree

- DOE estimate: $500 Million

- MOX Services has no allowance

DOE estimate includes a reasonable assumption for obsolescence