

Critical Analysis Team Report

CAT Report #27

20 March 2002

The Critical Analysis Team (CAT) conducted a brief silos project status review at Jacob's facility in Oak Ridge in early March 2002. The CAT acknowledges and appreciates both Fluor Fernald (FF) and Jacobs cooperation and patience in supporting this review.

During the review, the CAT:

- Received status briefings on both Silo 3 and Silos 1 and 2 design efforts, including briefings utilizing Jacob's 3-D modeling design tool.
- Briefly reviewed and discussed comments with DOE, FF and Jacobs on the Silo 3 container and excavator draft specification.
- Discussed the CAT's Silo 3 Conceptual Design comments¹ with DOE, FF and Jacobs.
- In consultation with DOE, the CAT outlined its ongoing support activities for April and May.
- Reviewed the most recent Jacobs schedules and the draft FF rebaselined schedules.
- Reviewed the Silo 3 conceptual design cost estimate.

This report focuses on two items resulting from the CAT's Jacob's visit: (1) schedule for ongoing CAT activities (primarily design reviews); and (2) comments on the Silo 3.

CAT Schedule

The CAT's anticipated activities in the months of April and May include:

- CAT representative attend silos 'topic of the month' public briefing (April 9th).
- Review for information Silo 3 Remedial Design Package (to be issued to the CAT March 18th).
- Review for information Silo 3 Equipment Sheets specification package (to be issued to the CAT April 30).
- Review for information Silo 3 cost estimate update (to be issued to the CAT second week of April).

¹ The comments discussed were those not identified by DOE for formal response.

- Review for information Silo 3 Buildings specification package (to be issued to the CAT April 15).
- Formal review and comment on Silo 1 and 2 Preliminary Design (to be issued to the CAT on April 15):
 - CAT meet in Richland to review and develop comments on preliminary design (April 22 through April 26).
 - CAT draft comments to be forwarded to DOE Fernald by April 26.
 - CAT meet with DOE, FF and Jacobs to review CAT comments (April 30 through May 3).
- CAT meet at Jacobs to participate in squad check on Silo 3 Mechanical specification package (May 13 through May 17).

CAT Silo 3 Conceptual Design Cost Estimate Comments

The CAT does not expect the following comments to receive formal responses in the existing cost estimate. Rather, the CAT hopes these comments will be useful in supporting future estimate submittals throughout the silos project.

The cost estimate appears to be low for the following reasons:

- The estimate does not include contingency or escalation. Rather, the estimate includes an 'allowance' that does not appear sufficient for reasonable project contingency and escalation. Following is a table of rough estimates of allowances the CAT would assign to each construction activity:

Activity	Cost Estimate Allowance	CAT Allowance
00 Site/Demo/Site Improv.	0%	10%
01 Concrete	10%	17%
02 Structural Steel	10%	17%
03 Architectural	10%	17%
04 Equipment	0%	50%
05 Piping	5%	35%
06 Electrical	5%	50%
07 Instrumentation	5%	35%
08 Paint/Insulation	5%	10%
09 HVAC	5%	50%
10 Fire Protection	0%	10%

- The estimate does not include costs for the activities listed below. The CAT acknowledges that many of these activities may be included in the construction management, project management and waste management functions explicitly excluded from this estimate. Similarly, some of the

information might be found in the Appendices listed but not provided in the CAT's estimate package.

- Jacobs, FF and DOE activities during construction.
 - Removing contaminated dirt and importing clean-fill.
 - Construction acceptance testing.
 - Startup testing.
 - Turnover activities.
 - Operation Readiness Review activities.
 - Lost time due to weather.
 - Equipment such as dump trucks, compressors, small generators, welding machines, etc.
 - Equipment mock-up and testing.
- A spot check of equipment estimates indicates what appear to be underestimates of equipment costs. Examples include the vacuum wand system (\$12,750), Feeder system (\$10,230), Isokinetic sampling system (\$490), Conveyors (5 at @24,580 each) and Breathing air skid units (\$4,280 each). The project should ensure that these estimates are accurate.
 - The estimate is not currently organized to reflect the current Silo 3 approach. The design is being completed by specification package and the estimate is organized largely by discipline. It is unclear how this estimate might be used as a Government Fair Cost Estimate (GFCE) if it doesn't relate to the packages that will be released for bids.

The unique project approaches being pursued under the silos project make it difficult to track activities and expenses. A root cause of this appears to be the lack of a sufficiently detailed Work Breakdown Structure (WBS) system. The existing WBS does not provide the tracking, controlling and reporting functions necessary for sound project management. This not only confuses the CAT, but lead to a lack of discipline in ongoing project activities.

- The estimate assumes four ten hour days per work week. Depending on existing labor agreements, this may lead to unnecessary overtime costs (approximately 2hrs per day). The project should ensure the work schedule provides the most efficient, effective approach to complete the work.
- 07 Instrumentation page refers to Nuclear Certified Instruments. The CAT does not understand the need for or use of these instruments in this facility.