FERNALD CITIZENS ADVISORY BOARD

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FCAB UPDATE

Week of July 2, 2001

(Last update was dated June 4, 2001)

MEETING SCHEDULE

Stewardship Committee Meeting Monday, July 9, 2001, 6:30 p.m.	**Services Building Conference Room**
Full FCAB Meeting Thursday, July 12, 2001, 6:00 p.m.	**Services Building Conference Room**
DOE Cleanup Progress Briefing Tuesday, June 17, 2001, 6:30 p.m.	**Services Building Conference Room**

ATTACHMENTS

- 7/12/01 Draft FCAB Meeting Agenda
- Draft Minutes of the 6/16/01 FCAB meeting
- 6/15/01 Letter from Reising to EPA's on rebaseline
- 2 page fact sheet on Fernald response to GAO Audit
- Summary and CAT Report #22
- News Clippings

NEWS and ANNOUNCEMENTS

NOTE MEETING DAYS AND TIMES

Both the FCAB and Stewardship committee meetings will not be held on their usual days. In addition, the DOE briefing has also been moved.

FOR FURTHER INFORMATION

Please contact Doug Sarno or Mildred Charles, Phoenix Environmental
Phone: 513-648-6478 or 703-971-0058 Fax: 513-648-3629 or 703-971-0006
E-Mail: djsarno@theperspectivesgroup.com

FERNALD CITIZENS ADVISORY BOARD

FULL BOARD MEETING
Services Building Conference Room

Thursday, July 12, 2001

DRAFT AGENDA

5:30 p.m.	Dinner
6:00 p.m.	Call to Order
6:00 – 6:30 p.m.	Chair's Remarks and Ex Officio Announcements (Updates on rebaseline, supplemental appropriation and direct rail pilot)
6:30 – 7:15 p.m.	University of Cincinnati Presentation and Dialogue
7:15 – 8:00 a.m.	CAT Update and Discussion on Site Issues
8:00 – 8:15 a.m.	Feasibility Study Issues for On-Site Facilities
8:15 – 8:45 p.m.	Identify Issues for Annual Retreat Planning
8:45 – 9:00 p.m.	Public Comment
9:00 p.m.	Adjourn

FULL BOARD MEETING
Services Building Conference Room

Saturday, June 16, 2001

DRAFT MINUTES

The Fernald Citizens Advisory Board met from 8:30 a.m. until 12:00 p.m. on Saturday, June 16, 2001, at the DOE Fernald Site in Hamilton, Ohio. The meeting was advertised in local papers and was open to the public.

Members Present	French Bell Sandy Butterfield Marvin Clawson Lisa Crawford Steve Depoe Lou Doll Pam Dunn Gene Jablonowski Jane Harper Graham Mitchell Robert Tabor Thomas Wagner Gene Willeke
Members Absent	Jim Bierer Steve McCracken Fawn Thompson
Designated Federal Official	Gary Stegner
Phoenix Environmental Staff	Douglas Sarno Crystal Sarno
Fluor Fernald Staff	Tisha Patton

Approximately 10 spectators also attended the meeting, including members of the public and representatives from Department of Energy and Fluor Fernald.

1. Call to Order

Tom Wagner called the meeting to order at 8:40 a.m.

2. Remarks and Ex Officio Announcements

Tom Wagner noted that the meeting would be shorter than usual since a number of issues are not ready for discussion. The stewardship committee had a very good meeting this week to begin the evaluation of options for on-site construction of new space. There will be some discussion on those topics; however, no detailed information is yet available. DOE is sponsoring a long-term stewardship workshop at the end of July in Grand Junction and there is space for another FCAB member to attend. FRESH is also sponsoring travel for one of its members. Jim Bierer, Pam Dunn, and Bob Tabor will be attending, as will Tisha Patton. Doug Sarno is the lead facilitator for the event and is being paid through the Grand Junction office. Gary Stegner, Joe Shoemaker, Eric Woods, and others from the site will also be attending.

The SSAB chairs meeting will be in Santa Fe at the end of August. Tom plans to attend that meeting. Jim is unable to attend because it is the first week of school. The FCAB would like to send one other member if there is interest.

The FCAB now has a website. Members are encouraged to check it out and get back to Doug Sarno with any comments or suggestions. All FCAB recommendations to date are available on the site including the 1995 report. Soon the minutes and mailings will also be on the site. There are links to all of the other SSAB sites. Graham Mitchell also asked members to review the Ohio EPA site and let them know of any suggestions.

Yesterday Senator Voinovich visited the site and met with stakeholders. There was a good representation of FCAB members, FRESH and labor organizations, and Tom believes that it was a good opportunity to share their views with the Senator.

Susan Brechbill reported that Bob Card, formally head of ICF-Kaiser at Rocky Flats, was sworn in as the third DOE Undersecretary and Jesse Roberson, former DOE manager at Rocky Flats will be replacing Carolyn Huntoon as EM1, but is still awaiting Senate confirmation. The transition is expected to be complete by the end of June.

Pam Dunn asked French Bell if he knew about an ATSDR report on non-cancerous illnesses. Pam understands that the report is currently stuck in peer review. Inside news is that the report is going to be damaging, and that is why it has been held up. French said that he would look into it.

Graham Mitchell mentioned that he believes that the FCAB could help the Portsmouth site as they are struggling with issues of re-industrialization, an on-site disposal facility, and other things. Although they do not have an SSAB, they do have issues that their dealing with. Pam said they had tried to help them several years ago and that the community is still in the anger stage. After some discussion, it was determined that the FCAB would be interested in providing assistance, but was unsure of how to begin. They will look to Graham for guidance in how they could be most helpful.

Fluor has been given the go-ahead from DOE to begin conceptual designing on Silo 3. Jacobs is doing that work for Fluor out of their Oak Ridge office. It will be three to six months before there is anything for the FCAB to review.

It was reported that the direct rail pilot test has been put on hold to reevaluate the costs and benefits. Lisa Crawford noted that there is a large movement against shipping waste to Nevada because of Yucca Mountain. The gambling industry is now supporting this issue and has put in a large amount of money. This should not affect Fernald as long as shipping practices do not change. Fluor is re-evaluating the numbers and should have some results within the next 30 days. The FCAB will receive an update at its next meeting.

Fluor is hoping to test the thermal desorption technology for mixed waste. They are also considering treatment of no more than 20 drums from other Ohio sites. These drums will not be stored at Fernald, only treated. The hope is that funding will come from EM-50, not from the site budget. Lisa Crawford stated that 20 drums would be fine to help out smaller sites in Ohio, but that a lot of drums would not be okay. The FCAB will be kept informed as this issue develops. Lou asked if this technology has been used before. Graham said that the technology has been tried, but not with mixed waste.

Glenn Griffiths reported that the first CERCLA five-year review of Fernald has been completed. Gary Stegner will get The Perspectives Group a copy for distribution to the FCAB and will place a copy on the web.

It was reported that non-typical waste was found in waste pit #2 this week. Fluor believes that the item is a "cold trap" that served as a drain in the system for the original pilot plant. One was dented this week with a backhoe and a total of three have been found so far. Johnny Reising emphasized that the incident was handled by-the book and no problems are expected.

It was reported that on June 19 through 21, a team of Russians would be visiting the site as part of a mixed waste focus area. On June 21, a group is also coming from Argentina for a general site tour.

The TSCA incinerator at Oak Ridge is accepting Fernald waste again. The next two batches will be transferred within the next few weeks, which leaves just two

more batches for treatment. If the incinerator remains available to Fernald, all TSCA waste should be sent to Oak Ridge within the next year.

3. Update on Rebaselining and Budget Issues

It was reported that there is activity on the Hill to increase DOE funding and that a supplemental appropriation may add $10 to $20 million in additional funds to Fernald for 2001. Senator Voinovich noted that his support for increases at Fernald would be made if Fernald could make a clear case that money would be saved in the long term. FCAB members asked that DOE prepare the necessary materials to make the case to Congress for higher funding.

The baseline is a series of documents. As of the end of May, DOE received the new baseline for the new contract. They have begun a process to review, validate and approve it and send it back to Fluor for any corrections. The goal is to have it finalized and in place by October 1. This process will involve people from the Ohio field office staff, the EM project office, EM-6 (project management group), and OECM. There was a kick-off meeting this past week with representatives from all of these groups to establish roles and responsibilities. A plan and schedule is now in place to review the baseline. They are looking at Cost, Schedule, and Risk. DOE has generated about 80 questions thus far. DOE and Fluor each have a management team in place to coordinate the effort. DOE will keep the FCAB informed.

There is another Inspector General (IG) review that is taking place this month. The IG selects a different project in DOE each year to evaluate for cost and schedule. The waste pit project has been selected as the representative project this year. The site has just received questionnaires and forms that have to be filled out within the next two weeks. Lisa asked if DOE responded to the study of the on site *vs.* off site disposal and Glenn said they have responded twice. The report is on the web and Glenn will get the FCAB a copy.

Doug suggested that there be a public-friendly tracking system created to show site progress, past accomplishments, and future plans so that people could easily track site progress against the baseline. Johnny said they would work with the FCAB to develop a system once the baseline was approved. Susan Brechbill noted that the Ohio field office provides a quarterly report.

4. Education Facility and Design Competition

The FCAB proposal for a design competition and feasibility study was one of four that were forwarded to DOE Headquarters. The University of Cincinnati proposal was a very different scope than anticipated. Since the proposal was very expensive, it was not forwarded to HQ. The results of the DOE grants should be known in a few weeks. In order to plan for the design competition and evaluate

the potential for early construction on site, a great number of questions will need to be answered in a feasibility study. The July stewardship meeting will explore all of the questions that need to be answered in the feasibility study. All of the parties that need to be a part of the study will also be addressed.

The Design Competition should raise the awareness of what the stakeholders are doing at the site in order to raise the visibility of long-term plans for the site. UC is very interested in having a role in this process. Susan Brechbill reported that she and John Bradburn have met several times with the UC President to discuss ideas at a broad conceptual level. It is now time to begin more detailed discussions on how to get the FCAB involved directly with UC.

It was reported that John Bradburn has offered to share a part of Fluor's award fee with the community to help bring about the shared community vision for Fernald. Any fee that Fluor receives above 75% of the total available fee, Fluor will split 50% with site workers and community. The FCAB will have some input into what that money might be spent on with Fluor's ultimate approval. John Bradburn is suggesting that half be put to construction of the on site facility and the other half be placed in trust for long-term management of the facility. If Fluor received 100% of their fees, the community share would be $18 million.

Susan emphasized that the educational facility and associated activities are the FCAB's project. DOE and Fluor want to work with the FCAB to support them, but the FCAB will be looked to for decision-making in the community.

Graham reported that the memorandum of understanding has been signed by Ohio EPA and DOE and is now with Fish and Wildlife. The next step is to write some settlement language. There may be additional opportunities for funding through this vehicle.

Doug suggested they put some dates together to look at other local museums such as the Cincinnati Nature Center. Doug and Tisha will work with these places to see what tours could be arranged and possibly accomplished prior to the July meeting.

The date of the next stewardship meeting was changed to Monday, July 9th.

5. New Member Recruitment

Jim had mentioned that he was going to talk to several people who had expressed interest. LaVerne Mayfield expressed an interest, but has not been back. Lisa Blair will be at the next meeting. Todd Trammel, who works at the site, has expressed an interest in joining the FCAB. Doug wondered if some members of the CRO and Health Effects Subcommittee should also be invited to join the FCAB if those groups are disbanded. Also, their issues should be re-addressed by the CAB at the September retreat. Graham inquired about

someone with a Parks connection who would be on the receiving end of the site when the CAB has completed its work. Pam strongly urged the FCAB to confirm that there are no insider connections attached to membership in the FCAB. These new people need to do their homework and get with the entire team, not join to address their own agenda. Susan suggested that some people might be more appropriately accessed as advisors to the board, as opposed to actual members.

It was noted that the Guards Union has a new slate of officers and perhaps they will be interested in once again being represented on the Board. Lou Doll offered to contact someone in the Guards Union leadership.

Tom Wagner asked for approval of the minutes from the April and May meetings. Bob made a motion that they be accepted as presented. Lisa seconded. The motion passed unanimously.

The next meeting will be on July 12 at 6:00 p.m. A light supper will be served prior to the meeting.

6. Public Comment

Wagner opened the floor to public comment. Glenn Griffiths noted that Dennis Carr had reached the 20-year milestone of working on the site.

7. Adjournment

Tom Wagner adjourned the meeting at 11:15 a.m.

I certify that these minutes are an accurate account of the June 16, 2001 meeting of the Fernald Citizens Advisory Board.

_____

Tom Wagner, Vice-Chair Date
Fernald Citizens Advisory Board

_____

Gary Stegner Date
Deputy Designated Federal Official

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Department of Energy
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Post-it® Fax Note 7671	Date 6/19	# of pages ▶
To Doug Sarno	From Gary Stegner	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

FYI

JUN 15 2001

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

BASELINE

References:
1. Letter from J. A. Saric, USEPA, to J. W. Reising, DOE-FEMP, "FDF Rebaseline of the Fernald Project," dated February 28, 2001
2. Letter from T. Schneider, OEPA, to S. McCracken, DOE-FEMP, "Baseline," dated March 9, 2001

We are in receipt of the above referenced letters. The Department of Energy (DOE) is appreciative of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency's (OEPA) recognition of the progress that has been attained at the Fernald Environmental Management Project (FEMP). The progress at the FEMP is directly attributable to the partnership between the DOE, our regulators, and stakeholders, as well as the contractor. Maintaining these proactive relationships is of utmost importance to DOE.

Due to the similarity and consistency of your concerns and positions, the DOE is responding singularly to your above referenced letters. This correspondence is intended to provide general responses to your concerns.

In February, DOE agreed that in the mid-April time frame, we would take a position regarding the baseline sequence of work that is being developed by Fluor Fernald, Inc. We made this commitment with the intent to assure that DOE's position would consider input

from all stakeholders. During this three month period of time, we have had numerous meetings and discussions and have received written input from the USEPA, OEPA, and the Fernald Citizens Advisory Board (FCAB). This letter is intended to document our position, which was stated in meetings the week of April 15, 2001, and close the loop in responding to the letters we have received.

First of all, let me say that I am impressed with the open, candid discussions that have taken place. The process thus far in trying to deal with the important issue of how best to accomplish the work within the funding levels that Fluor Fernald, Inc. has been directed to assume, has been substantive. It is apparent that everyone is dedicated to getting the job done and that our positions are all intended to support that objective. Following is a summary of the DOE position. It is important to note that rebaselining is still "work in progress" with an expected completion date in September. As an example, the original Alternative #6 has been revised to reflect the results of recent site developments as well as stakeholder input. We will continue to try to narrow and hopefully eliminate any differences that we have.

Some background is appropriate in order to provide a framework for the discussion that follows. The basis for our individual analyses and collective discussions has been various work sequencing alternatives prepared by Fluor Fernald, Inc. These Alternatives were developed in order to provide cost and schedule comparisons for different approaches to the work. The USEPA and the State generally favor Alternative 3, which would assure continuous waste excavation and waste placement activity. Alternative 6, on the other hand, would result in discontinuation of waste excavation and waste placement for an extended period of time, and it is Fluor Fernald, Inc.'s position that this Alternative will result in the best overall cost and schedule savings.

Having considered all of the input we have received, DOE supports implementation of Alternative 6, as revised. Based on an independent review by my staff, it is DOE's conclusion that this course of action offers the best opportunity to accelerate the schedule and minimize the cost of the project, while not compromising safety, quality, or remediation objectives.

We recognize that support of this alternative will jeopardize some of the projects existing regulatory milestones and we take this circumstance very seriously. At the same time, we believe that the new cost plus incentive fee contract with Fluor Fernald, Inc. will produce a path forward that ultimately minimizes schedule while assuring quality and safety. The very structure of the contract, which emphasizes a break from "business as usual" demonstrates the DOE's commitment to the Fernald cleanup and provides the best opportunity to minimize the impacts of revised funding.

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This baseline prioritization calls for an interim suspension of the soils excavation and placement of material in the On-Site Disposal Facility (OSDF). In addition to the regulatory compliance issues associated with the suspension, your letters also expressed technical concerns about the protectiveness of an interim cap for OSDF operations. In deciding to move forward with the scenario funding prioritization, the DOE evaluated this issue and relied heavily on the position of Geosyntec, the design Engineer of Record. Geosyntec, a nationally renowned firm specializing in the design, construction, and operation of engineered disposal facilities, has established the position in writing that suspension of material placement in the OSDF can be accomplished without compromise to its long-term integrity. In pursuing regulator and stakeholder support for the OSDF, the DOE agreed to implement a very conservative approach to its design, construction, and operation. The DOE is not aware of any comprehensive, quantitative evaluation that concludes such a very conservative approach is compromised by an interim suspension in material placement. The DOE agrees that loss of institutional knowledge during the interim period of these impacted projects is of concern. The DOE will strongly encourage Fluor Fernald, Inc. to implement its plan to include key technical and managerial staff from impacted projects in a specific retention plan.

The chosen scenario prioritizes the Silos and Waste Pits Projects. These projects have historically been the stakeholder's highest remedial priority and, specifically, present the most significant long-term risk remaining on-site. The Silos Project also represents the overall project's critical path and, therefore, the key to closure acceleration and cost reduction. The DOE acknowledges that past difficulties have been experienced on the Silos Project. This does not, however, negate the benefits of aggressively pursuing the project. The FCAB has reiterated our stakeholders' desire to continue high prioritization of the silos. In addition, the DOE believes several recent developments make successful implementation of the project more likely. First, chemical stabilization has been chosen as the remedy specifically because of the higher degree of technical certainty. Second, Fluor Fernald, Inc. has added GTS-Duratek Federal Services to its team. GTS-Duratek Federal Services has extensive successful experience with the waste stabilization technology.

Your letter questions if it is realistic to achieve the soil excavation and placement rates associated with the chosen scenario. The referenced rates were the result of a downward revision by Fluor Fernald, Inc. Soils Project personnel to reflect what they believe are readily achievable.

The DOE recognizes that regulatory issues exist with this prioritization and that, ultimately, alignment with your Agencies is important to successfully implementing our path forward at Fernald. We will continue to work with you on work prioritization approaches that best support closure.

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If you have any questions regarding this letter, please contact me at (513) 648-3139.

Sincerely,

Johnny Reising

FEMP:Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

cc:
K. Chaney, EM-31/CLOV
N. Hallein, EM-31/CLOV
A. Tanner, OH/FEMP
G. Jablonowski, USEPA
F. Bell, ATSDR
F. Hodge, Tetra-Tech
M. Schupe, HSI GeoTrans
R. Vandegrift, ODH
D. Carr, Fluor Fernald, Inc./MS2
T. Hagen, Fluor Fernald, Inc./MS65-2
T. Walsh, Fluor Fernald, Inc./MS46
AR Coordinator, Fluor Fernald, Inc./MS78
ECDC, Fluor Fernald, Inc./MS52-7

FERNALD-SPECIFIC MATERIAL RELATED TO GAO AUDIT, *NUCLEAR CLEANUP: DOE SHOULD RE-EVALUATE WASTE DISPOSAL OPTIONS BEFORE BUILDING NEW FACILITIES*

What was the subject and purpose of the audit?

- The audit examined the decision to build on-site disposal facilities at three DOE sites --- Fernald, Oak Ridge and Idaho National Environmental and Engineering Laboratory --- rather than dispose of waste at existing off-site disposal facilities
- The audit results were based on cost considerations; transportation/handling risk, stakeholder desires and political issues were not factored into the audit

Why did Fernald originally decide to build its On-Site Disposal Facility (OSDF)?

- The cost to dispose of the material on site was, and still is, substantially less (by a ratio of at least one to 2.5) than the cost to dispose of it at a permitted commercial disposal facility such as Envirocare of Utah, Inc.
  - The recently completed Fernald Closure Baseline confirms that on-site disposal costs will be less than $400 million compared to the 1995 estimates of $578 million for on-site disposal and $772 million for off-site
- Building an on-site facility reduced transportation and handling risk
  - At the time the decision was made, Fernald had no on-site rail capabilities
  - Truck transport was the only available option
  - The site and its stakeholders were interested in reducing the risk by reducing the number of trucks on the road carrying Fernald waste; estimates can vary depending on packaging type and material being shipped, but today's best estimate indicates more than 100,000 truck loads would have been required to ship OSDF-bound materials to an off-site disposal location, at over 2,000 miles per trip
  - One local stakeholder group, the Fernald Citizens Advisory Board (FCAB), was especially interested in reducing the number of Fernald trucks going through transited states as well as the amount of waste ultimately disposed of in Utah or Nevada
    - Although the site now has a viable rail transportation option to Envirocare, there is still much more risk associated with rail transportation than with movement of waste across the site to the OSDF
    - Additionally, even the upgraded rail infrastructure could not support the Waste Pits Project (projected total of 626,000 tons) and the OSDF Project (projected total of 2.5 million cubic yards) simultaneously. One project would have to be delayed until the other was complete, and the cost of the delay considered.
    - With the current site rail shipping capacity, it would take more than 20 years to ship the remaining 1.9 million cubic yards of OSDF-bound materials to Envirocare
    - A further upgrade of the Fernald rail infrastructure including additional track, railcars, engines etc. would cost over $20 million.
- The Fernald site and the local stakeholders recognized the political risks associated with off-site disposal
  - State governments may attempt to close their borders to certain types of waste transport
  - State governments can impose "taxes" on certain types of transport within their borders
  - City/county/local governments can affect route changes that increase mileage/cost
  - Tribal governments can close the borders of their reservations to waste transport
  - Stakeholder groups in traditional disposal site states can bring costly, time-consuming pressure to bear on programs they perceive of as "dumping" all their waste on them
  - All of the above political risks can create schedule delay

How do Fernald regulators, local stakeholders, and stakeholders in disposal location states feel about the issue?

- Waste disposal in general, and the OSDF in particular, have been high priority issues with the FCAB since its inception in 1993
- The FCAB's first major set of recommendations, issued in 1995, recommends a "balanced approach" to waste disposition at Fernald
- The balanced approach involves disposing of the much larger amount of lesser-contaminated waste on site, while shipping the smaller portion of higher-contaminated waste off site for disposal
- The Waste Acceptance Criteria for the Fernald OSDF limit the level of contaminated soil and debris that can be placed into the facility consistent with the design and engineering constraints of the facility
- Regulators are fully supportive of the OSDF and the balanced approach to waste disposition in general
- Stakeholders in Nevada and Utah indicated their formal support for the balanced approach to waste disposition in the Feasibility Study phase; their comments are noted in the Responsiveness Summaries for Operable Units 2 and 5
- Local stakeholders would rather not have a disposal facility in their community; however, most have come to recognize the value of shouldering some of the responsibility for the by-products of the Cold War

Does the audit recommend that Fernald stop work on the OSDF?

- No; it recommends that on-site facilities in the complex that are still in the planning stages re-examine project cost estimates
- It also recommends that these sites closely re-evaluate the volumes of waste planned for on-site disposal
- It encourages sites to take a closer look at long-term monitoring costs that will be associated with maintenance and environmental protection of disposal facilities and factor these costs into their estimates
- Lastly, it calls attention to decreasing disposal costs at locations such as Envirocare of Utah, and infers that DOE at the Headquarters level should entertain the possibility of committing to disposal of larger volumes of waste at certain facilities in return for guaranteed reduced costs

What is the Department of Energy's position on this audit relative to Fernald?

- DOE acknowledges that the pre-Records of Decision (ROD) cost estimates used for comparison are not as accurate as those developed after the RODs
- DOE maintains that actual disposal volumes at the Fernald site have not changed since issuance of the Records of Decision
- DOE is willing to re-visit the cost comparison using more updated information with any potential volume discounts as suggested by Envirocare
- However, the cost differential would have to be very significant in order to out-weigh the remaining criteria considered in the decision to build a disposal facility on site

File: OSDFaudit
Rev. 2, 6/19/01

FERNALD CITIZENS ADVISORY BOARD

Memorandum

DATE: June 29, 2001

TO: FCAB Members

FROM: Doug Sarno

RE: Summary of CAT Report #22 on Silos

The Critical Analysis Team (CAT) issued Report #22, dated May 15, 2001, on the Silo 3 rescoping evaluation and the design information package for Silos 1 and 2. FCAB members should read at least the first two pages of the report to gain an overview of CAT issues.

Overall, the CAT found the silos approaches to be sound but noted that existing documentation is insufficient for realistic cost and schedule planning. The CAT reminded DOE and Fluor to focus on the management, design, and contractual issues that have plagued past Silos efforts.

The report contains detailed comments on the technical documents reviewed which provide an insight into the level of detail of the CAT's work.

The CAT recommended that the Silos project implement a design review process that meet detailed design review principles.

Members of the CAT will be in attendance at the July 12 FCAB meeting and have been asked to provide an overview of their findings of the Silos program at this time.

Critical Analysis Team Report on Design Review Processes, Silo 3 Rescoping Evaluation and Silos 1 and 2 Design Information Package

CAT Report #22

15 May 2001

The CAT has reviewed the Silo 3 rescoping evaluation and the design information package for Silos 1 and 2 remediation. This CAT report presents comments on these two documents as well as recommendations for an ongoing design review process for the Silos Project.

In general, mechanically retrieving Silo 3 waste through an opening in the side of the silo appears to be a sound approach. However, it is still very early in the alternative evaluation and design development process, and many critically important issues and challenges will have to be resolved in order to assure Silo 3 project success.

Challenges discussed in further detail include controlling airborne contamination, designing a technically sound solution that can safely breach the silo and contain the contents, deploying an effective and reliable retrieval mechanism/system, and developing and successfully implementing necessary project management practices.

The existing Silo 3 documentation provides an adequate basis to begin developing a conceptual design and resolving the many outstanding technical issues associated with this project. The next step is the development and execution of a Conceptual Design Plan.

The Silos 1 and 2 remediation project also appears to be pursuing a sound concept. Again, however, the materials submitted for review are incomplete and wholly inadequate for developing technical, cost and schedule baselines. The next step is to prepare and execute a Conceptual Design Plan.

While concepts for both Silo 3 treatment and Silos 1 and 2 remediation appear sound, the existing documentation is not very useful as a basis for a cost estimate or a realistic schedule. Without a firm baseline scope, further design work and development of resource loaded schedules, any cost and schedule estimates are unreliable. The current documentation is less complete than the Silos 1 and 2 Record of Decision Amendment feasibility studies, estimates and schedules.

Attachment 1: Design Review Process

Effective design reviews are fundamental to the success of any project. Therefore the CAT offers the following processes to help ensure that Silo 3, AWR and Silos 1 and 2 remediation proceed with deliberative, comprehensive and expeditious design reviews.

All design packages should include the identification of the package contents: types and numbers of specifications and drawings (P&ID, electrical one-lines) and other design documents. Design review teams should be organized based on design package type and content. That is, design packages must be matched to appropriate reviewers. Design review teams must represent all appropriate Fluor Fernald organizations (safety, quality, operations and maintenance, etc.). For each review package, a kickoff meeting should be held with the review team to verify assignments, communicate the review schedule, assess the review processes, etc. On complicated review packages an Architect/Engineer representative should also be present during the kickoff meeting to explain the package and assure complete understanding of the review package by the reviewers prior to initiating the review.

For each project the following activities must be completed:

- Identify each design document to be produced and develop a cost and schedule for completion.
- Assure Architect/Engineer completion of inter- and intra-squad checks of all design documents prior to their being submitted for customer review.
- Identify and schedule design reviews.
- Identify each review package including specific documents to be contained therein.
- Schedule each design review including the total design review time and the Fluor Fernald review time (portal-to-portal).

Based on the design package received, the following steps should be implemented as appropriate:

1. Document Control (ECDC):

- Determines completeness of the submitted package.
- Verifies content by item and number.
- Enters appropriate identification and tracking information into the document control system.
- Reproduces the design package.
- Distributes the review package to appropriate review personnel.
- Retains complete records of all design review efforts.
- Forwards the approved set of review comments to the AE.
- Following resolution of comments by the AE, reflects resolution in the document control system.

6. Architectural Engineer:

- Prepare and submits design review packages.
- Receives design review comments.
- Resolves design review comments.
- Reflects comment resolutions in future design documents.
- Establishes and maintains an action list of all open review comments and tracks each review comment to closure.

Key Decision Points:

Historically, the silos project has not rigorously followed a key decision process akin to the one outlined below. As a result, the silos project has often allowed projects to progress without adequate design documentation or credible baselines. The following key decision process is aimed at ensuring that the project has a sound basis as it moves forward and, ultimately, is successful.

1. Conceptual Design Plan (responsibility, preparation, content, schedule) for DOE approval.

2. Conceptual Design Report (CDR) for DOE acceptance. CDR contents included:

   - P&IDs (including HVAC).
   - Electrical One-lines.
   - Plot Plan.
   - Facility Layout: plans, elevations, and sections.
   - Major equipment selection.
   - Mechanical flow diagrams.
   - Process Control Plan.
   - Process flow diagrams.
   - Design packages.
   - Specifications.
   - Equipment Data Sheets (e.g., vessel sizes, pump capacity, etc.).
   - Mass and energy balance calculations.
   - References to supporting calculations.

3. Detailed Design for DOE acceptance.

   - Updated versions of appropriate conceptual design documents.
   - Drawings and specifications for fabrication, construction, and procurement.
   - Procurement Plan, Quality Assurance Plan and Construction Plan.
   - Operating and maintenance philosophy.
   - Process Control Plan including sampling plan and analysis matrix.

ttachment 2: Comments on Silo 3 Rescoping Evaluation

The CAT does not expect formal written responses to the following specific comments. Rather, the comments are offered to support further development of a credible rescoping document and to raise issues that must be resolved during the conceptual design process. While the CAT does not expect formal comment responses, future revisions of the document as well as design documentation should adequately resolve concerns raised in this attachment.

The CAT offers the following specific comments of the Silos 3 rescoping document/evaluation:

1. The document should identify the process by which alternatives are selected for evaluation. In addition, the document appears to represent a decision-making process that is an evolution of the Silo 3 project as opposed to starting over. If this is true, it should be stated in the document.

2. The schedule is overly optimistic. If the schedule is accurate, the project is already several weeks behind schedule. Following are specific comments on the schedule:
    - Fig. 2, Sheet 1: The schedule shows bench-scale testing has already started. Is this true?
    - Review cycles are extremely short and unrealistic.
    - Fig. 2, Sheet 1: Based on the information and background available, all cost estimate and schedule estimates should be identified as, at best, having an accuracy of + or – 50% or, at worst, Rough Order of Magnitude estimates.
    - Fig. 2, Sheet 2: A 154 day total design time appears almost impossibly aggressive, especially given that 62 days of the 154 days is for review and approval. Thus, only 92 days of time is available for design activities. Even though the system and process are identified as simple, this schedule will most likely prove impossible.
    - Typically, when schedules are unrealistically short, the project management processes suffer.
    - Fig. 2, Sheet 2: The design review and approval times appear very unrealistic: 18 days for conceptual; 20 days for preliminary; and 24 days for final.
    - There in only one review scheduled for conceptual, one for preliminary and one for final design. Furthermore, each review identifies 9 days for review and comment resolution. This schedule is very unrealistic and, from a project management standpoint, is next to impossible.
    - How much contingency was included in the schedule? How was this contingency developed and applied/distributed?
    - An effort should be made to accelerate the EPA review of the remedial design package. For example, involve EPA during each design stage and review so they are well aware of the design basis and are part of the early approvals. EPA should be involved early so they can provide an accelerated approval.

CCTV is, in this case, poor for assuring an excavator won't contact the silo structure, especially given the high probability of heavy dusting. Considerable engineering and testing should be done to ensure the project uses the simplest, proven, most rugged retrieval equipment.

11. Regardless of the mixing mechanism, the water/waste material reactions should be understood prior to beginning the process design. For example, the robustness of the reaction, any reaction byproducts, the rate of heat generated and the time period over which this reaction occurs, and the possible impacts of a higher than anticipated heat generation rate. The cause of concern is that some of these events could impact personnel, safety requirements, handling, packaging, storage and shipping.

12. The heat of mechanical mixing retained in the waste material as well as the exothermic nature of the reaction may result in significantly higher than expected temperatures in the supersaks. The impact of the exothermic water-waste reaction on the supersaks needs to be determined. Also, it is unclear to the CAT how "hands-on" sealing of supersaks can meet ALARA requirements. If supersaks are not airtight, special storage (i.e., monitoring, access control, air treatment) may be required to deal with steam, radon or other releases.

13. Are the mechanical and electrical subcontracts (construction) so similar that the fieldwork can be completed in exactly the same amount of time and at the same time? Generally, mechanical leads electrical by a considerable period of time.

14. More justification is necessary for the document statement that "the preferred approach is ALARA".

15. The IT/FDF interface can be a vulnerability. Measures should be taken to ensure that any requirements of other contractors such as IT be identified and a process developed for resolve any potential issues. An Interface Control Document or an MOU is suggested.

16. Are the minutes of the referenced brainstorming session available for review?

17. The Silo 3 project team should make maximum use of all past data including test data, test reports, video tapes and personnel interviews.

18. The document should clearly state that the schedule and cost data are order of magnitude.

19. Is the budget available within the Site FY 2001 and the 2002 budget projections sufficient to proceed with this project?

20. Page 5, mid page 4th bullet:
    - What is an 'unoxidized nitrate"? Nitrates are highly oxidized.

30. P. 15-16: What has past history shown to be the average time to obtain approvals similar to those discussed here? Are these times reflected in the Silo 3 schedules and cost estimates?

31. P. 16: If the State of Utah denies Envirocare's request can the Silo 3 material meet the 11e(2) cell requirements of 60,000 Ci/g per railcar?

32. P. 16: The Th-230 concentrations referenced on this page are confusing: 150,000 pCi/g, 60,000 pCi/g, 21,010 – 71,650 pCi/g, 4,000 pCi/g, and 30,000 pCi/g. These should be clarified.

33. P. 21: Where would the rework process be performed were a treated batch of waste to fail analysis and acceptance requirements?

34. P. 24 Does using existing subcontractors and teaming partners open Fluor Fernald to criticism and possible claims of noncompetitive activities?

35. Fig. 2, Sheet 1: Waiting until a bench scale test plan is prepared, reviewed and approved before procuring chemicals appears an unnecessary delay. These could be parallel activities unless there is uncertainty concerning the treatment process and product formulation. If the latter is the case, then bench-scale formulation testing may require more than 28 days.

36. Fig. 2, Sheet 4: Are there any HVAC system components that will become long lead procurement items (e.g. blowers, filters, stack, instrumentation)?

37. Fig. 2, Sheets 3 and 4: Is FF's intent to bid the civil, mechanical, and electrical subcontracts separately? What if the same bidder is unable to win all three of these packages? If separate contracts are awarded, field integration by FF will become vital to the success of the project, and FF will need to develop a comprehensive interface control document.

38. General: The text indicates the following Silo 3 excavation rates:

Shifts/Day	yds/shift	ft^3/shift	ft^3/hour	ft^3/min
1	24	548	69	1.2
2	12	274	34	0.6
3	8	183	23	0.4

The above rate appears rather low. A person with a shovel could move that much material. What was the basis of the retrieval figures? Where is the pinch point and can it be minimized? Does it make sense to go this slow? FF needs to perform time and motion studies on remote activities to optimize design.

Attachment 3: Comments on the Design Information Package for Silos 1 and 2

The CAT does not expect formal written responses to the following specific comments. Rather, the comments are offered to support further development of a credible conceptual design. While the CAT does not expect formal comment responses, the conceptual design should adequately resolve concerns raised in this attachment.

1. The Design Information Package represents only very preliminary information on the Silos 1 and 2 remediation facility. The package is not sufficient for an AE to begin work on conceptual design. A Conceptual Design Plan is a first step to providing more mature information for initiating a conceptual design, and this Plan should be completed and issued as soon as possible.

2. The CAT recommends the Conceptual Design Plan include the approach to reviewing and analyzing/evaluating the existing Foster Wheeler AWR design and recommend/implement applicable modifications to support Silos 1 and 2 remediation work.

3. The formula for the Silos 1 and 2 waste form is very important. In conducting treatability tests to support formula development, FF should ensure it takes maximum advantage of past silos project information: vitrification pilot plant, POP test reports, video tapes of past tests, interviews with involved test personnel.

4. A long-running concern of the CAT is the ability of the Silos Project to utilize AWWT for wastewater disposal. AWWT is of limited capabilities when applied to waste streams that could conceivably result from Silos 1 and 2 treatment processes. During design, FF must be cautious in its assumption about the use of AWWT, and fully document and justify the basis of its use.

5. The design information package lists three main treatment challenges: a) the removal of large quantities of water from the slurry pumped from the TTA so a smaller quantity of treated waste is produced; 2) the retention of high concentrations of water and lead compounds in the treated waste while still meeting required shipping and disposal requirements; 3) the control of radiological exposure to the workers and the public to ALARA. The CAT wishes to add one more concern to this list: The generation, control, treatment and disposal of secondary wastes and especially wastewater.

6. At this early stage of the project, FF should investigate other retrieval methods from the TTA. The proximity of the TTA to the treatment plant may make mechanical transfer possibilities appealing.

18. P. 2-15: Section 2.8 Rework says little about rework. It simply describes storage of failed containers of treated waste. Rework is going to be a difficult process—a 22,000-pound monolith with 3-inch steel walls will not be easily shredded or unloaded.

19. P. 2-16: Handling 2200 pound empty containers and 22,000 pound loaded containers is going to require cranes and hoists as well as heavy lifting devices such as lugs, hooks, slings and yokes. Remote handling is difficult and should not be discounted. Generally, if a remote crane covers more than 100 feet, a second control station is required or the crane radio operated because of the size and management of the control cable.

20. P. 2-19: What will be the process for collecting, treating and disposing of liquid wastes generated when treating spent HEPA filters?

21. P. 2-19: Can the carbon remain in and be disposed of with the RCS, or must it be removed and treated and disposed separately?

22. P. 2-23: Does the RCS design include the ability to add more carbon beds? If not, how will the potential additional flow from this facility be accommodated?

23. P. 2-26: The HVAC systems (especially the high activity zones) must maintain a minimum of about 100-150 CFM flow across open doors, hoods, hatches, etc. This is especially important with the process equipment.

24. P. 2-26: Will the HVAC systems be single pass, push-pull, pull, or push? The CAT recommends a single pass pull system.

25. P. 2-29: Is the control room planned to be a positive pressure area to prevent possible airborne contamination?

26. P. 2-41: The airflow in potentially contaminated areas should be from least to most contaminated areas, e.g. entryways to process vessels. This helps prevent the spread of contamination.

27. P. 3-7, 5.1.3: What does the statement "Equipment or a means to prevent contamination of the external surface of the disposal container is provided" mean? Remote equipment, robotics? The areas will need to be provided with coated floors and walls, methods to collect liquids, and methods to accelerate decontamination.

28. General: Has a preliminary risk list been prepared for this project and the risks analyzed? This should be done since the result will be used in preparing the cost estimate and schedule. The risk assessment should be part of the conceptual design report.

29. Dwg P-SK- 1, D:

36. Dwg F-PID-D, A: Has FF established a color standard for run, standby, stop, auto control station indicator lights? If so, this standard should apply to this design.

37. Dwg F-PID-E, A: The Lime Slurry, Phosphate and Alum Addition pumps and mixers are SS. The alum and lime addition lines are SS. However, the phosphate addition line is carbon steel? Is this justified?

38. Dwg F-PID-J, A: Will the fly ash and cement flow adequately from a 12 foot diameter bin, or will vibrators be required. During POP testing Chem Nuclear Systems encountered problems getting the additives to flow (even on a miniature scale) from the hopper although it was provided with a vibrator.

39. Who will be responsible for providing and operating the analytical lab?