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DOE-0435-03

Mr. Tom Schneider, Project Manager
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Dear Mr. Jablonowski and Mr. Schneider:

REVISED APPROACH TO DECONTAMINATION AND DISMANTLEMENT SEQUENCE FOR THE MULTI-COMPLEX DECONTAMINATION AND DISMANTLEMENT PROJECT

The purpose of this letter is to summarize our planned modifications to the sequencing of several Decontamination and Dismantlement (D&D) steps within the Multi-Complex D&D project, and explain why we believe the modifications will continue to meet the approved requirements and constraints accompanying our existing implementation plans, D&D contract performance specifications, and waste-acceptance inspection protocols.

Candidly, the intent of the re-sequencing modifications is to gain cost and schedule efficiencies while maintaining compliance with our worker safety, radiological control, and waste acceptance requirements. We have completed our internal evaluations and conclude that the re-sequencing modifications will continue to meet the requirements of our approved plans while permitting us to gain at least four weeks of schedule advantage in our field activities. While the four weeks of schedule recovery may not sound like much in the broad sense of the Fernald Closure Project (FCP), it is important to meeting our planned baseline completion date of September 30, 2003 for the Multi-Complex D&D project so that soil excavation activities in Area 3B/4B (e.g., beneath the Multi-Complex footprint) can move forward as planned. The schedule advantage, therefore, is important to the subsequent pace of soil excavation and placement next year, which will be a record placement year according to our 2006 schedule. With further delays in this area, soil excavation and placement will become key critical path items. This increases cost to the taxpayer and delays risk mitigation with no offsetting improvement in protectiveness.

In our planning, we recognize that both the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) have expressed concerns with the comprehensiveness of the waste acceptance inspection process that will accompany the modifications, and are issuing this letter to explain the steps that we believe will allow us to maintain the integrity of the process and satisfy existing requirements. While we conclude internally that the planned modifications meet all the material handling and inspection steps required by our existing approved plans (and therefore, do not trigger the need for formal document revisions subject to formal agency review and approval), we also conclude that informal documentation is needed to explain the proposed modifications and facilitate agency concurrence and understanding of the revised strategy. Our goal is for the agencies to concur with the basis behind the planned modifications by the time physical work under the revised strategy is initiated in the field.

Historical Approach to D&D Project Sequencing

Historically, the D&D projects at the FCP have generally employed the following work sequence, each performed as an independent step to the degree applicable to the individual structure:

1. Perform safe shutdown activities to remove the majority of holdup materials and identify customers for Fernald equipment and nuclear products (completed site-wide in 1997).

2. Complete the utility isolation process and mobilize needed project infrastructure (lights, generators, fencing, etc.).

3. Seal the building using various foaming agents to create containment.

4. Surface decontamination step if applicable (gross water washdown).

5. Removal of asbestos-containing material (ACM).

6. Identification of process-related equipment and piping.

7. Dismantlement and removal of process-related equipment and piping utilizing a combination of mechanical shearing and manual disassembly.

8. Release cleaning of the remaining interior of the structure (water washdown and application of encapsulant).

9. Removal of the skin of the structure (i.e., transite, corrugated metal, etc.).

10. Dismantlement of the structural steel frame and non-process related equipment using mechanical shearing.

During this work sequence, the Waste Acceptance Organization (WAO) is present during all of the steps where waste is generated or material segregation/inspection steps are needed. The inspections of the materials for waste acceptance purposes are conducted real-time as the materials are being removed. WAO's primary function is to ensure that all process-related equipment and piping is free of visible process residue, that all materials meet On-Site Disposal Facility (OSDF) size criteria, and that all prohibited items have been properly segregated and removed. WAO then oversees the loading of roll-off boxes for transport to the OSDF to ensure that only eligible items are placed in the box. At this time, the OSDF manifest is completed and signed by both a D&D project representative and the WAO representative. Materials that are not eligible for OSDF disposal are placed in designated above-WAC containers using appropriate inspection criteria and Field Tracking Logs (FTL) depending on the disposition location (for e.g., to Envirocare via the Waste Pits Remedial Action Project rail loadout pathway).

The WAO decisions at the front end are also verified at the OSDF during material placement. The WAO oversight conducted at the OSDF has proven effective in verifying manifesting paperwork, ensuring materials meet the size restrictions, and ensuring that prohibited items are not inadvertently delivered to the OSDF.

Over the past five years, this work sequence has worked well in the D&D of 14 major complexes at the FCP and has permitted the Fernald Team to dismantle 123 structures while generating 140,946 cubic yards of D&D debris that has met eligibility and inspection requirements for disposal in the OSDF. The sequence has also allowed the D&D field construction personnel, WAO inspection personnel, and the field radiological controls personnel to gain first-hand familiarity with the various types and conditions of materials generated and the nuances of material inspection and segregation. A team atmosphere has developed and many of the key oversight field team members have been together for the entire five years of operation. In short, they can read each other's moves, anticipate needs, and spot and solve oversight problems and vulnerabilities early in the process. This approach has allowed the team to maintain planned schedules for all of the complexes where the configuration of the buildings promoted execution of the work using this general step-wise work sequence, even in light of the unique attributes each building has presented (design of the structure, historical purpose, height, complexity, etc.).

Need for a Revised Sequence in the Multi-Complex D&D Project

The historical work sequence described above was also used to plan and initiate the D&D work for the Multi-Complex D&D project. What we are experiencing after about a year's worth of effort under this sequence, however, is that there are three multi-story buildings in the Complex that present complications to performing the work in the historical work sequence: the Recovery Plant (8A); the Hot Raffinate Building (3E); and the Ore Refinery Plant (2A). These buildings are multi-leveled structures that have elevated tanks, equipment, and piping that require an extensive amount of manual labor to size reduce and remove ahead of building skin removal and structural dismantlement activities. Much of

the equipment and piping that remains is hard to access and requires difficult man-lift placements inside the cramped quarters of the buildings to gain access for disassembly in the multi-story environments. During the execution of the work to date using the historically utilized sequence, we are rapidly concluding that if the skin of the building can be removed ahead of time (to gain additional avenues of access), and the remaining pieces of equipment and piping can be removed concurrently with the structural D&D activities, we could expedite the decontamination and size reduction steps without materially compromising the follow-on waste acceptance determination and inspection step. As an indirect benefit, we also believe that a revised approach that addresses access to the cramped overhead conditions will also result in a much safer physical environment within which to conduct the work.

To date, the D&D project has collectively removed 80% of the process-related equipment and piping from these three buildings using the historical work sequence. We conclude a revised sequence would be more appropriate for the remaining 20%. Of the remaining process-related piping and equipment, well over 60% consist of tanks, which would be easily identifiable if they were removed concurrently with structural D&D activities. Because of the manually intensive way the equipment and piping has been removed to date, coupled with the difficult access to the remaining items, the project finds itself approximately five weeks behind schedule. By employing the historically utilized sequence to complete the remaining equipment and piping removal activities, the project will continue to fall behind the desired schedule.

Our planned modifications, therefore, would include the following revised or concurrently executed steps for the three buildings:

1. Safe shutdown and utility isolation activities (already complete).

2. Gross building washdown (already complete).

3. ACM removal (already complete).

4. Removal of 80% of process-related equipment and piping following the existing sequence (already complete). This ends the existing sequence and begins the revised approach.

5. Inspection walkthrough by WAO, radiological compliance, and D&D project personnel to identify any remaining process-related items that must be removed before implementing the revised sequence, in order to achieve radiological control objectives.

6. Inspection walkthrough by WAO, radiological compliance, and D&D project personnel to confirm the Step 5 process-related items were removed, and to confirm the types and configurations of remaining items to be removed under the revised process.

7. Release cleaning (including water washing and application of encapsulant, if needed) of all external surfaces and any remaining accessible internal surfaces that may pose an airborne release potential.

8. Removal of the skin of the building to gain additional equipment and piping access.

9. Concurrent removal of remaining process-related items with structural D&D activities.

10. WAO waste-acceptance inspection of all materials brought to the ground, with concurrent material segregation, size reduction, and appropriate containerization of items eligible/not eligible for disposal in the OSDF.

11. WAO oversight and verification at the OSDF placement end of the process.

As discussed by telephone with the USEPA and OEPA, another contributing factor to the schedule issues we are experiencing in the Multi-Complex D&D project has been the collective performance of Fluor and the D&D subcontractor. Our approach to addressing resulting schedule delay has been twofold: 1) using contractual remedies available, DOE has addressed this issue with Fluor. Fluor has been able to employ contractual remedies with their subcontractor to require additional equipment and staffing to improve project performance; and 2) identifying improved implementation initiatives that can be utilized to recover schedule. The improvement initiatives identification is what resulted in the revised sequence approach discussed in this letter. Together, these remedies should allow the team to recover schedule and not compromise the integrity or quality of the effort.

Compliance with Internal and External Approved Plans

During the development of the revised approach, DOE and Fluor Fernald conducted an internal review to ensure the revised approach meets existing internal and external approved plans. This review focused on: 1) our internal radiological control plans (aimed at controlling airborne emissions and worker protection); 2) existing project-specific and site-wide air monitoring requirements; 3) our internal D&D water management plans; 4) the Operable Unit 3 Integrated RD/RA Work Plan, which outlines the general approach to dismantlement and material segregation and handling; 5) the Implementation Plan for the Multi-Complex D&D project, which includes the contract performance specifications governing the work performed by the D&D subcontractor; and 6) Chapter 5 of the WAC Attainment Plan for the OSDF, which controls the waste acceptance process for D&D debris.

We conclude from our review that the revised approach will:

1. Continue to comply with our existing radiological control plan, provided we implement the additional radiological measures accompanying Section 3.1.C of existing Specification 01517 *Removing/Fixing Radiological Contamination.* This

section covers radiological requirements specific to the decontamination of structures and outdoor process tanks and pipes. These additional measures, coupled with the dust suppression measures already required for structural steel dismantlement under Specification 05126 *Structural Steel Dismantlement*, will mitigate the potential increases in airborne emissions potentially triggered by the removal of the skin of the buildings and thus exposing the interior components.

2. Continue to comply with the FCP's existing project-specific and site-wide air monitoring requirements. As with the existing strategy, radiological control monitoring will continue to be performed to assess air emissions at the project boundary, assign and verify worker personal protective equipment needs, determine project boundary dimensions, and evaluate the potential for personnel exposures within the affected work area. Site-wide air monitoring under the Integrated Environmental Monitoring Plan (IEMP) will also continue at the FCP property boundary (as with the existing strategy), to evaluate FCP-wide air impacts at the fenceline against the NESHAP radiological dose limit. Over the past five years of increased remedial activity, a solid track record has been developed that documents the success of the FCP projects -- including the D&D projects and the Waste Pits Remedial Action Project -- at keeping fenceline dose rates well below the required standards. For example, in 2001 while both the Plant 5 and Plant 6 D&D efforts were underway (along with other on-going FCP projects), fenceline annual dose levels were about 0.8 millirem (compared to the 10 millirem standard). If the increased fenceline activity observed during the several months of Plant 5 and Plant 6 D&D efforts were maintained for the entire year, the dose would have likely been about 3 millirem, again considerably less than the 10 millirem standard. The fenceline track record to date indicates that the D&D projects can be implemented with little dose impact, and the modifications discussed in this letter, while potentially adding an additional source of air emissions, can be readily accommodated by the types of radiological controls proven over the last five years of D&D.

3. Continue to comply with the FCP's existing internal water management plan. D&D wash waters will continue to be managed as before (containment, evaluation, discharge). Fugitive dust control water may perhaps enter the storm sewer but this is considered incidental and will not cause an adverse impact to the nature of the storm water and is no different than what has been experienced during past D&D activities.

4. Continue to comply with the Operable Unit 3 Integrated RD/RA Work Plan requirements. This document outlines the general approach used for D&D and provides the initial set of D&D performance specifications. As stated in Section 3.2, "A key strategy for the implementation of above-grade decontamination, dismantlement, and material handling activities is the use of performance specifications to direct the remediation subcontractor in the performance of work which meets the remediation objectives provided in this work plan. Performance

specifications differ from descriptive or detailed specifications in that the remediation work methods are not specified. The performance specifications state what is to be done, what regulations, codes, and standards apply, and identify any limitation on activities while leaving details of how to accomplish the task to the remediation subcontractor. ...While also ensuring consistency among projects, these generic performance specifications may be modified according to the particular needs of the project." We conclude from this language that the re-sequencing approach is consistent with the flexibilities and latitudes offered by the plan to address building-specific nuances to perform work in a compliant and safe manner.

5. Continue to comply with the Implementation Plan for the Multi-Complex D&D project. This document provides project-specific and building-specific information, as well as provides the set of D&D performance specifications used on the Multi-Complex D&D project. The implementation plan continues to adopt and follow the fundamental approaches delineated in the Operable Unit 3 Integrated RD/RA Work Plan and the initial set of D&D performance specifications. The already-approved specifications in the implementation plan were consulted during the planning of the modified approach and were found to adequately cover the type of work contemplated. In particular, Section 3.1.C of Specification 01517 *Removing/Fixing Radiological Contamination*, outlines the requirements specific to decontamination of structures and outdoor process equipment and piping.

6. Continue to comply with the WAC Attainment Plan for the OSDF. Section 5 of the Plan outlines the WAC attainment demonstration process for materials generated during D&D activities. In essence, the Plan reiterates the language regarding the purpose and use of D&D performance specifications in the execution of the work (as discussed above in #4 and #5), and the role of Specifications 01517 and 01120 in the visual inspection and segregation of affected materials. The Plan also outlines the roles and responsibilities of WAO in the planning, design, and field verification steps for WAC attainment. For the revised approach discussed in this letter, WAO personnel were directly involved in the development of the modified strategy and have independently concluded that the integrity of the WAC demonstration process can be maintained even with the sequencing modifications, provided there is an increased presence of WAO personnel at both the generating location and the placement location in the OSDF. WAO field and management personnel acknowledge that verifying compliance with the WAC will be more difficult with the implementation of this approach, and will require more time during the final loadout process to accommodate the increased level of scrutiny. Both Sue Lorenz (WAO Manager) and Scott Osborn (WAO D&D Lead) have been involved in the planning and accommodation of the revision and, based on their five years of implementation experience and first-hand knowledge of the types and configuration of materials to be encountered, feel comfortable that the increased level of scrutiny at both ends of

the generation and placement process will ensure that no above-WAC material will be placed in the OSDF. Other steps Scott and Sue will be relying on to ensure the integrity and comprehensiveness of the WAO process include:

- Management commitment to ensure that adequate numbers of field personnel will be available to WAO to conduct the inspections at the respective ends of the process.
- Frequent use of radio communications with equipment operators to enhance the segregation and loadout process.
- Commitment on behalf of DOE and Fluor Fernald senior management to ensure ample time is provided for the WAO inspection process to occur while concurrent equipment removal and structural D&D activities are underway. This includes proper representation of the steps necessary for the WAO process to occur in the contractual instructions given to the D&D subcontractor. This will be accommodated by Specification 01120 and clearly articulated in the revised contract language provided to the subcontractor.
- Commitment by all parties to be sensitive to changing conditions in the field and to accommodate WAO's needs accordingly.

WAO's review during the planning step has indicated that the WAC Attainment Plan can accommodate the approach described in this letter, and no formal changes are warranted. The key to success, however, is the increased scrutiny required during execution, and the recognition by all parties that ample time will be required to facilitate this success.

Plan for Additional WAO Field Resources to Support the Revised Sequencing Approach

As discussed with the USEPA and the OEPA by telephone, additional WAO inspection resources will be utilized in the field to accommodate the revised sequencing approach. A question was raised by the USEPA concerning what additional WAO field resources would be needed compared to the historically utilized sequence. In response, this section explains the similarities and differences between the two approaches from the WAO inspection vantage point, and verifies that sufficient experienced WAO resources are available to conduct the increased scrutiny anticipated under the revised approach. Historically, after all process material and equipment is removed from the building (under WAO oversight), WAO conducts their verification step at loadout by having one WAO field representative present per individual piece of loadout equipment utilized (shear, grappler, or loader). WAC verification at this stage consists mainly of identifying oversized debris and the occasional prohibited item. Any oversized debris is reduced to meet WAC and any prohibited items

are segregated and dispositioned appropriately. Based on loadout operations underway at any given time, under the historical approach WAO may have as many as six people conducting verification inspections in the field.

Under the revised sequencing approach, WAO will continue to assign one field representative per piece of loadout equipment in used. More equipment will likely be in use under the revised approach, which in itself will require more WAO field representatives in the field at any one time. In addition, because of the increased potential for commingling of above and below WAC materials, the WAO organization will have additional field personnel available (as backup) if needed to monitor loadout activities should the pace require it. That decision will rest with Scott Osborn as the WAO D&D Lead. WAO has been relatively unaffected by the recent round of site layoffs (a concern raised during the phone call) and additional field personnel can be made available, including through senior management's commitment to add peak-load subcontractor personnel as needed, whether to support soil excavation, OSDF placement, WPRAP oversight, or D&D oversight. This same handpicked subcontractor support has been utilized effectively during the past several construction seasons to manage peak WAO field loads. At this stage of the FCP's D&D activities, all key WAO filed personnel have a minimum of five years of experience with the type of identification calls and judgments necessary, including when to ask for additional resources as needed. It will be re-emphasized to WAO field personnel that they have the obligation to request additional assistance if they cannot effectively make WAC verifications due to the pace or complexity of the work. The D&D project construction personnel have also acknowledge that loadout could progress at a slower pace to accommodate the increased complexity of WAO's scrutiny. Through these measures, Scott is comfortable that the revised approach will not detrimentally tax his resource base and he can accommodate the ebbs and flows of the work as it progresses.

At the OSDF placement end, WAO will be provided with adequate resources to ensure that they are adequately staffed to provide 100 percent coverage of the placement of the materials generated through the revised approach. If this requires drawing from the same peak-load resource banks (including handpicked subcontractors or properly cross-trained site personnel), WAO again has the senior management commitment to utilize these resource banks as necessary.

In summary, we believe this approach provides a schedule enhancement without foregoing any of the D&D steps or oversight requirements. We have initiated modifications to project paperwork and expect to begin implementing these changes in the field the week of July 14, 2003. While time is of the essence, we would like to work diligently over the short term to facilitate your concurrence. Also, we welcome any visits by you or members of your staff to see the current condition of the buildings or to observe (during actual execution) that these steps are being adequately implemented in the field.

If you have any questions, please contact Johnny W. Reising at (513) 648-3139.

Sincerely,

Glenn Griffiths

FCP:Reising

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