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Department of Energy

Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246
(513) 648-3155

APR 13 2005

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

DOE-0216-05

Mr. Thomas Schneider, Project Manager
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF RESPONSES TO COMMENTS ON ADDENDUM NO. 5 TO THE ON-SITE DISPOSAL FACILITY IMPACTED MATERIALS PLACEMENT PLAN

References:

1) Letter, J. Saric to J. Reising, "OSDF Addendum 5 IMPP," dated February 10, 2005

2) Letter, T. Schneider to W. Taylor, "Comments on Addendum No. 5 to the OSDF IMPP," dated March 2, 2005

Enclosed for your review and approval are responses to U.S. Environmental Protection Agency and Ohio Environmental Protection Agency comments on Addendum No. 5 to the On-Site Disposal Facility Impacted Materials Placement Plan Placement of Category 5 Oversized Materials by Category 3 Placement Procedures. Upon approval these comment responses will be incorporated into the revised plan.

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If there are any questions concerning or require any additional information, please contact Johnny Reising, (513) 648-3139.

Sincerely,

William J. Taylor
Director

FCP:Reising

Enclosure: As Stated

cc w/enclosures:
D. Pfister, OH/FCP
J. Reising, OH/FCP
T. Schneider, OEPA-Dayton (three copies of enclosure)
G. Jablonowski, USEPA-V, SR-6J
F. Bell, ATSDR
M. Cullerton, Tetra Tech
M. Shupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald, Inc./MS78

cc w/o enclosures:
K. Alkema, Fluor Fernald, Inc./MS01
J. Chiou, Fluor Fernald, Inc./MS88
F. Johnston, Fluor Fernald, Inc./MS99
C. Murphy, Fluor Fernald, Inc./MS77
ECDC, Fluor Fernald, Inc./MS52-7

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RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON ADDENDUM NO. 5 TO THE ON-SITE DISPOSAL FACILITY IMPACTED MATERIAL PLACEMENT PLAN

FERNALD CLOSURE PROJECT
FERNALD, OHIO

APRIL 2005

U.S. DEPARTMENT OF ENERGY

RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON ADDENDUM NO. 5 TO THE ON-SITE DISPOSAL FACILITY IMPACTED MATERIAL PLACEMENT PLAN (20100-PL-0007-ADD5)

COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Page #: NA Line #: NA
Original Comment #: 1
Comment: First, because some of the oversized materials to be placed in the OSDF have irregular shapes, it will be difficult to backfill and compact material around them. Special care should be taken during backfilling and compacting to minimize voids and the potential for future settlement.

Response: Agree. As in transite placement, oversized material will be placed in such a manner to minimize voids and facilitate proper compaction of Category 1 materials around the oversized material.

Action: The Addendum will be revised to more clearly state the requirements for placement.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original Comment #: 2
Comment: Second, some of the oversized materials will have hydraulic cylinders attached that may contain hydraulic hoses and fluid. The hydraulic hoses and fluids should be removed and the openings plugged to prevent soil from working its way into the cylinders.

Response: Agree. Hydraulic hoses and fluids will be removed and openings plugged.

Action: The Addendum will be revised to include the removal of hoses and fluids.

RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON ADDENDUM NO. 5 TO THE ON-SITE DISPOSAL FACILITY IMPACTED MATERIAL PLACEMENT PLAN (20100-PL-0007-ADD5)

COMMENTS

1. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1 Pg #: 2 Line #: Item 1 on top of page Code:
Original Comment #: 1
Comment: Neither the text in the following paragraph or Table 2 of the GeoSyntec letter contain the number of pipe tees to be disposed. How many tees are there and are they identical? The text states that the tees have metal flanges, which preclude the splitting of the pipes. We agree that cutting through the flanges may not be practical. Why can't the flanges be cut off and then the remaining stumps be split through the center? Perhaps a sketch would be helpful.

Response: Agree. Tees and flanges will be cut and/or split to meet the Impacted Material Placement Plan (IMPP).

Action: The Addendum will be revised to omit passages about the tees and flanges.

2. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1 Pg #: 2 Line #: Item 2 Code: c
Original Comment #: 2
Comment: The last sentence on the second paragraph states, "If however, the tanks cannot be crushed or split, then they can be placed according to this addendum." This statement violates the IMPP requirement that voids in equipment greater than one cubic foot be filled. The tank should be filled with free-flowing granular material or grout.

Response: Tanks will be placed as Category 2 material after splitting, crushing, and/or shearing as necessary, according to the existing IMPP.

Action: References to the tanks will be eliminated from the Addendum

3. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1 Pg #: 2 Line #: Item 3, 3rd paragraph Code: c
Original Comment #: 3
Comment: This 'item' consists of 44 wire cable coils. Are these coils radiologically contaminated? Why can't they be recycled? Is it impractical to unwind the wiring prior to disposal?

Response: The wire cable coils will be size reduced in order to meet the existing impacted material sizing requirements.

Action: References to the wire cable coils will be eliminated from the Addendum.

4. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2 Pg #: 3 Line #: 2rd paragraph Code: c
Original Comment #: 4
Comment: This paragraph does not describe a placement procedure. This paragraph allows Fluor to place these materials in virtually any fashion it wants. Re-write the paragraph to comply with the following:

- Items should be separated by at least 8 feet. More spacing may be required to accommodate vehicles or compaction equipment. A smaller spacing is not acceptable regardless of compaction density.

- Under no circumstances is it permissible to place items adjacent to each other. No item may be closer than eight feet from any other item.

- The use of grout is not acceptable for any use except filling the voids inside of large, monolithic objects.

Response: The intent of Section 3.2 of the Addendum was to state that the rules that apply to Category 3 grids apply to Addendum No. 5 including spacing and the filling of voids. The minimum spacing is specified in the second sentence of the second paragraph. The second paragraph will be re-written to clarify the above two bullet items.

The third bulleted item above is not a correct statement. According to the IMPP: "Items having voids with a larger than 1 ft^3 shall be filled with a quick-set grout, or flowable cohesionless material..."

Action: Verbage from the Section 8.4.1 of the IMPP will be added to clarify the spacing and filling of voids. Sentences describing the possibility of reducing spacing and special backfilling procedures will be deleted.

5. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2 Pg #: 3 Line #: 3rd paragraph Code: c
Original Comment #: 5
Comment: The text states, "If grout is used it shall be allowed to set for 4 hours prior to the commencement of fill around the item." If grout is used only to fill the voids within large objects per our previous comment, Ohio EPA does not see the need for the 4-hour set requirement.

Response: The statement of: "If grout is used it shall be allowed to set for 4 hours prior to the commencement of fill around the item" comes from the second paragraph of Section 8.4.1 of the current IMPP. We will eliminate this requirement as directed by Ohio EPA.

Action: This requirement will be removed from Section 3.2 of Addendum No. 5.

6. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2 Pg #: 3 Line #: Last sentence of 3rd paragraph Code: c
Original Comment #: 6
Comment: The text describes the use of non-biodegradable, expandable foam to fill voids not subject to compressive stresses. Free-flowing aggregate and a pumpable grout are the only two acceptable methods to fill voids.

Response: Agree. Free-flowing cohesionless material or pumpable grout are viable options for filling voids of individual items within the OSDF cells.

Action: The last sentence in the third paragraph of Section 3.2 will be deleted.

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23 March 2005

Mr. Uday Kumthekar
Fluor Fernald, Inc.
P.O. Box 538704
Cincinnati, Ohio 45253-8704

RE: Addendum No. 5, Revision B
Placement of Category 5 Oversized Materials
By Category 3 Placement Procedures
Impacted Materials Placement Plan
On-Site Disposal Facility
Fernald Closure Project, Fernald, Ohio

Mr. Kumthekar,

This letter is in response to comments from Ohio and U.S Environmental Protection Agencies regarding our proposed Addendum No. 5, Placement of Oversized Material by Category 3 Placement Procedures. We have revised Addendum No. 5 (attached) to the Impacted Materials Placement (IMP) Plan which describes placement procedures as well as criteria for which oversized materials can be placed.

We hope this addendum addresses the concerns of both agencies. If you have any questions regarding this transmittal, please contact the undersigned.

Respectfully Submitted,
GeoSyntec Consultants

James A. Fleck, P.E.
Project Manager/Engineer-of-Record

CC:
J.D. Chiou, Ph.D., P.E., Fluor Fernald, Inc.
Charles C. Van Arsdale, Fluor Fernald, Inc.
Dave Phillips, P.E., GeoSyntec CQC
Collin Sukow, GeoSyntec CQC

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Addendum No. 5
To
IMPACTED MATERIALS PLACEMENT PLAN
ON-SITE DISPOSAL FACILITY

Placement of Category 5 Oversized Materials By Category 3 Placement Procedures

20100-PL-0007
Revision B
January 2005

United States Department of Energy

Fernald Closure Project
Fernald, Ohio

Prepared by

GeoSyntec Consultants
7400 Willey Road, MS 38
Hamilton, Ohio 45013

Under

Fluor Fernald, Inc.
Subcontract 03FF0699

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1. PURPOSE

Several items were encountered during demolition and excavation operations which do not meet any of the impacted material descriptions identified in the Impacted Materials Placement Plan (IMP Plan). The materials encountered are similar to Category (CAT) 3 materials with the exception that the materials are larger than the 4 ft maximum cross-sectional dimension requirement for Category 3 – Individual Placement procedures. The oversized materials currently identified cannot be size-reduced in a reasonable manner; therefore, this Addendum No. 5 provides an appropriate placement procedure for these oversized, Category 3, impacted materials.

2. BACKGROUND

Section 5.2 Impacted Material Categories of the IMP Plan states that, "Category 3 impacted materials are materials that must be individually handled and placed in the OSDF, and that are suitable for having Category 1 material placed around and against them. These impacted materials have maximum cross-sectional dimension of no more than 4 ft, are shaped such that Category 1 material can be compacted around and against them, and are essentially incompressible using standard compaction equipment." Several oversized items currently identified are similar to this definition with the exception of the 4 ft. maximum cross-sectional dimension requirement. The materials in question are larger than 4 ft. in cross-sectional dimension and cannot be size-reduced in accordance with the principle of ALARA (as low as reasonably achievable) regarding exposure to potential hazards. Therefore, in accordance with Section 8.6.1 of the IMP Plan, these oversized materials will be classified as Category 5. Section 8.6.1 states that "Materials either nominally larger than the physical criteria for the OSDF as identified in Section 4.3 (Physical Criteria) of this IMP Plan, or not reasonably anticipated by the currently identified categories in this IMP Plan, will require specialized placement plans to be developed on an as needed basis..." Therefore, this Addendum No. 5 provides the placement plan for the oversized materials.

3. PLACEMENT REQUIREMENTS

3.1 Material Description

This addendum addresses oversized materials that can fit into a 12 ft. x 12 ft. plan area with a maximum thickness of 4 ft. These materials include materials that cannot be size reduced in accordance with the principle of ALARA (as low as reasonably achievable) regarding exposure to potential hazards.

Several items identified by demolition and excavation require special handling. These items have been stockpiled and are currently available for placement in the OSDF. A brief description of the materials is as follows:

~~1.2 ft. diameter pipe Tee's measuring approximately 3 ft. by 3 ft. by 3 ft.;~~

~~2.tanks 2 ft. in diameter by about 5 ft. long;~~

~~3.coils of ACM wire cable with a 5 ft. OD, a 2.5 ft. ID, and a 2 ft. height;~~

~~4.~~1. construction equipment counter-weights 2.5 ft. by 1.5 ft. by 11.5 ft., and 3 ft. by 2.5 ft. by 5 ft.;

~~5.~~2. concrete crusher track-hoe attachments 6 ft. by 3.5 ft. by 3 ft., and 5 ft. by 3.5 ft. by 2 ft.;

~~6.~~3. "Slab Crab" (bucket) attachment 3 ft. by 3.5 ft. by 6 ft.;

~~7.~~4. bucket attachment 3 ft. by 4.5 ft. by 4 ft.;

~~8.~~5. track-hoe arm with 2 hydraulic pistons 15 ft. by 3 to 8 ft. by 3 ft.;

~~9.~~6. track-hoe arm with hydraulic piston 12.5 ft. by 3 to 8 ft. by 3 ft.;

~~10.~~7. ring gear with a 6 ft. diameter by 0.5 ft. high; and

~~11.~~8. undercarriage frame of track-hoe 7 ft. by 10 ft. by 1.5 ft.

~~Item No. 1 as listed above, while it in its current condition does not meet the size requirements of any placement categories, should be split through the centerline of the pipe as stated in Section 4.3 of the IMP Plan which states, "*...process piping with a nominal diameter of 12 in. or greater shall be split in half...*" After splitting the pipe tees, the tees would meet the requirements for CAT 2 material as they would have 1 dimension that is less than 18 inches. The large flanges on these pipe tees may preclude the splitting of the pipe tees. If this is the case, the tees will need to be placed in accordance with this addendum.~~

~~Item No. 2 as listed above, while it in its current condition does not meet the size requirements of any placement categories, should be crushed or split through the centerline of the tank similar to pipes as stated in Section 4.3 of the IMP Plan which states, "*...piping used as a surface water drainage conduit (e.g. corrugated metal pipe, concrete pipe, vitrified clay pipe) and non-process piping shall be crushed or split in half in length to reduce void space; maximum size shall be 10 ft. in length and 18 in. thickness.*". After crushing or splitting the tanks, the tanks would meet the requirements for CAT 2 material as they would have 1 dimension that is less than 18 inches. If however the tanks cannot be crushed or split, then they can be placed according to this addendum.~~

~~Item No. 3 as listed above consists of coils of electrical wire that has insulation that contains asbestos. Using the ALARA principal of exposure, it is recommended that the coils not be size reduced prior to placement in the OSDF.~~

~~The remaining Items 4 through 11~~These items consist of either solid metal or plate steel and are not practical to size-reduce in order to fit into an existing category. Therefore they may be placed in accordance with this addendum.

3.2 Placement Procedure

Oversized items meeting the material description stated above in Section 3.1 of this Addendum No. 5 can be placed as individual members in the OSDF. The items are to be placed in a grid established to receive oversized items. The grid requirements for these materials shall be the same as the requirements for Category 3 grids as stated in Section 8.4.1 of the IMP Plan, "*...should be placed toward the center of the cell, at least 50 ft. horizontally from the bottom of the select impacted material layer in the final cover system, and not in the same horizontal elevation within 100 ft. laterally of more compressible materials (i.e., Category 4 materials, and sludges and double-bagged asbestos of Category 5 materials). The 100 ft. laterally means a 100-ft. separation distance from all directions (i.e., north-south, east-west, diagonally) of placed Category 3 material.*"

To the extent feasible, groups of individual members shall be similarly and regularly sized to enable their placement in the grid in regular patterns. Items shall be placed individually a minimum of 8 ft. (2.4 m) apart. ~~However, a smaller spacing is allowed if compaction of Category~~ Any voids greater than one (~~1 material~~) square foot within or around ~~the items can be achieved to at least 85 percent with a rolling average of 90 percent of the standard Proctor maximum dry density, determined as described in Section 7.4.2 of the IMP Plan. Special backfilling procedures may need to be established and approved by the Certifying Engineer for uniquely shaped items. Like items such as the coils of wire cable and construction equipment counter-weights may alternatively be placed adjacent to~~ each ~~other in a single lift up to a 12 ft. by 12 ft. area as long as the voids can~~object must be filled with granular material and/or grout.

Free-draining liquids (e.g., hydraulic fluid) are to be removed from equipment prior to hauling the item to the OSDF. In the case of hydraulic components, the hoses and fluids are to be removed and the holes in the cylinders are to be plugged to prevent migration of soil into the cylinders. Items having voids with a contiguous void larger than 1 ft^3 (0.03 m^3), estimated based on a visual examination, shall be filled with a quick-set grout, or flowable cohesionless material approved by the Certifying Engineer. ~~If a grout is used, it shall be allowed to set for a minimum of 4 hours prior to the commencement of placement of fill around the item.~~ Void spaces may be filled before hauling material to the OSDF or the item may be positioned to facilitate the filling of the voids at the point of placement. ~~Voids larger than 1 cubic foot which are not subject to compressive stresses, such as the void space between the track hoe arms and their hydraulic pistons, may be filled with non-biodegradable, expandable foam to prevent migration of fines into the void.~~

NOTE: It is unlikely that granular materials~~,~~ or grout~~, or expandable foam~~ are available within the impacted areas, therefore, these materials, which are required to fill the voids, will likely need to be clean materials brought into the impacted area.

Prior to placement of the oversized materials, the surface of the in-place Category 1 impacted material shall be prepared by rolling with a smooth-drum roller in the placement area. The oversized materials shall be placed on the surface in a regular pattern with spacing between individual items described herein to allow Category 1 material placement and compaction with available equipment. The space between each item shall be filled with Category 1 material placed in maximum 12-inch-thick compacted (12 to 15 inches loose measure) lifts. A final

12-inch-thick compacted lift of Category 1 material shall be placed over each grouping (e.g., grid or portion of a grid) of oversized materials.

As the oversized items are expected to be less compressible than the majority of the impacted materials placed in the OSDF, the oversized items should be placed toward the center of the cell and not in the same horizon with more compressible materials (i.e., Category 4 materials, and Category 5 materials including sludges and double-bagged asbestos). Horizons of oversized items shall be separated by a least a 2 ft. (0.6 m) thick intervening horizon of Category 1 material.

3.3 Compaction

Compaction shall be conducted as stated in Section 8.4.3 of the IMP Plan, "*Each lift of soil (Category 1 material) between and above the Category 3 items shall be compacted using equipment capable of achieving compaction to at least 85 percent with a rolling average of 90 percent of the standard Proctor maximum dry density, determined as described in Section 7.4.2 of the IMP Plan. It is anticipated that the compaction moisture content for this Category 1 material will be within ±3 percentage points of the material's optimum moisture content. Specific requirements for compaction moisture content will be established by the Construction Manager during construction. These requirements will take into account the workability of the Category 1 material, the required shear strength to obtain adequate levels of OSDF stability, moisture contents needed to achieve dust and other fugitive dust control, and material trafficability.*

"*A final 12- to 15-in. thick loose lift of soil (Category 1 material) shall be placed above the Category 3 material. This final compacted lift shall be proof-rolled using equipment with a minimum gross vehicle weight of 20 tons and exert a ground pressure of at least 65 psi. Soft spots indicated by tire ruts more than 3 in. in depth or visible deflection under the moving proofrolling equipment shall be stabilized through additional passes of the compactor. Any soft spot that cannot be stabilized with further compactive effort shall be cause for additional treatment to the satisfaction of the Construction Manager. This treatment shall consist of removal, replacement, and recompaction of the Category 1 material, and, if needed, infilling soft spots/areas around the Category 3* (oversized) *material with grout or other material approved by the Construction Manager.*"