



September 22, 2015

Attention: Document Control Desk
Director, Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Re: Request for documents referenced in draft work plan referenced in Condition 5.C of 1 year Forbearance Agreement.

Mr. Hayes:

As requested by you during the telephone call of September 21, 2015 attached is the Transportation Plan and Phase 1 Work Plan. These were referenced in the Draft Work Plan sent to you via e-mail September 4, 2015.

Sincerely,

A handwritten signature in black ink, appearing to read "James Burgess", written over a horizontal line.

James Burgess
General Manager
FMRI, Inc.
Number 10 Tantalum Place
Muskogee, OK 74403

Attachments:
Phase 1 Work Plan
Transportation Plan

CC: John Hayes NRC/NMSS/DUWP/MDB

TRANSPORTATION PLAN

for

FMRI, Inc.

PHASE I REMEDIATION PROJECT
MUSKOGEE, OKLAHOMA FACILITY

REVISION 15 September 2015

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Transportation Plan

A Project Summary

Shipments of bagged work-in-progress (WIP) residual materials from the FMRI, Inc. (FMRI) Muskogee, Oklahoma Facility to Energy Fuels White Mesa Facility (Energy Fuels) in Blanding Utah will be consigned as exclusive use using intermodal containers, tractors with rolloff and chasses trailers, and 6 to 10 position railcars. Intermodal containers will be filled at the FMRI Muskogee, Oklahoma Facility with bagged WIP residual materials containing natural uranium and thorium constituents. The filled intermodal containers will then be loaded onto rolloff tractor trailers and transported to either the Port of Catoosa located in Catoosa, OK or Johnston Terminal, located in Muskogee, Oklahoma or directly to Energy Fuels in Blanding UT. The intermodal containers will be placed onto the articulated bulk container rail cars and transported by rail to a local transload rail spur in Salt Lake City, UT where they will be lifted onto tractor/trailers (chasses) for transport to Energy Fuels.

The Shipper of Record will be FMRI. Greenfield Logistics will provide the truck and rail transportation services as well as the transportation equipment.

The FMRI Muskogee Facility is located at:

- 10 Tantalum Place, Muskogee, Oklahoma 74403

The Energy Fuels facility is located at:

- 6425 South Highway 191, Blanding, Utah 84511

The basic description will be:

- radioactive material, low specific activity (LSA-I), 7, UN2912

B Transportation Equipment

Greenfield Logistics will supply clean and serviceable trucks, articulated bulk container (ABC) rail cars, and 25-cubic yard intermodal containers for transportation of the WIP residual materials from the FMRI Facility in Muskogee, Oklahoma to Energy Fuels in Blanding, Utah. Greenfield Logistics will ensure that all equipment will have been decontaminated in accordance with the requirements of Nuclear Regulatory Commission Regulatory Guide 1.86 (RG 1.86) prior to initial use on this project and upon completion of use on the project, or prior to use on any other project. Greenfield Logistics will coordinate the delivery of the railcars and intermodal containers to meet the loading needs and project schedule. Greenfield Logistics rail cars will be 177-ton ABC rail cars or 10 position rail cars (with a net payload of 150 for ABC or 260 tons for 10 position).

The intermodal containers shall be nominally 25.4 cubic yards each, with single piece metal retractable closing lids (meeting DOT IP-1 specifications). Greenfield Logistics anticipates each intermodal to be loaded with 18 to 21 tons of bagged WIP residual materials (based upon ability to obtain an overweight permit in OK). This is to meet highway weight requirements for the truck portion of the transportation.

The ABC rail cars will have a 150-ton net capacity and be able to carry up to 7 intermodals, depending on the center of gravity. The 10 position rail cars will carry up to 10 intermodals with a 260-ton capacity. FMRI will fill the intermodal containers. The intermodal containers will be transported to either the Port of Catoosa or Johnston Terminal and then loaded onto Greenfield Logistics rail car equipment in accordance with Greenfield Logistics approved loading configuration or transported directly to Energy Fuels in Blanding UT. FMRI shall be responsible to ensure that containers are not loaded to greater than the net weight limit for DOT-compliant truck transportation.

Greenfield Logistics shall deliver its rail and intermodal equipment to the Port of Catoosa, Frontier Terminal or Johnston Terminal or directly to FMRI in Muskogee OK. American Waste Management Services (AWMS) shall then schedule the delivery of the intermodal equipment to the FMRI Muskogee Facility to meet loading schedules.

C Carriers

The following carriers will conduct the transportation of the FMRI WIP residual materials from the FMRI Muskogee Facility to the Energy Fuels facility:

The trucking carriers will be:

FMRI Facility to Port of Catoosa or Johnston Terminal or Energy Fuels:

Smithy Environmental	Triad Trucking	Greenfield Logistics
7298 Charles Page Blvd.	5900 Triad Road	1325 West 2200 South, #D
Tulsa, OK 74127	McAlester, OK 74501	Salt Lake City, UT 84119
(918) 245-1070	(281) 456-0016	(801) 676-1575
(918) 245-4456 fax	(281) 456-0869 fax	(801) 676-1579

Salt Lake City, UT Transload to Denison Mines:

Greenfield Logistics	Champion Industrial Services	EnviroCare, Inc.
1325 West 2200 South, #D	537 West 800 South	505 North Main
Salt Lake City, UT 84119	Salt Lake City, UT 84101	North Salt Lake UT 84054
(801) 676-1575	(801) 886-2625	801-299-1900

The Rail Carriers will be:

Port of Catoosa:

Burlington Northern Santa Fe Railroad (BNSF)
2650 Lou Menk Drive, 2nd Floor
P.O. Box 961057
Fort Worth, TX 76161
817-352-1000

Johnston Terminal:

Union Pacific (UP)
416 Dodge Street
Omaha, NE 68179
(800) 272-8777

The transportation of the FMRI WIP residual materials via truck from the FMRI's site to the Port of Catoosa transload facility in Catoosa, Oklahoma will be conducted by the following route:

1. Start at 10 TANTALUM PL, MUSKOGEE – go 0.1 mi
2. TANTALUM PL becomes N 43RD ST E. – go 0.6 mi
3. Turn LEFT on E. HARRIS RD – go 0.2 mi
4. Turn RIGHT onto OK-165 N – go 2.2 mi
5. Continue onto Muskogee Turnpike W – go 30.6 miles
6. Continue onto OK-51 W – go 6.0 mi
7. Take exit onto US-169N toward Owasso – go 8.5 mi
8. Exit onto OK-266E/E 46th St N toward Tulsa Port of Catoosa
9. Continue to follow OK-266 E – 5.4 mi
10. Continue onto Main Parkway – 1.5 mi
11. Turn right onto W Channel Road until destination – 0.4 mi

The transportation of the FMRI WIP residual materials via truck from the FMRI's site to the Johnston Terminal transload facility in Muskogee, Oklahoma will be conducted by the following route:

1. Start at 10 TANTALUM PL, MUSKOGEE – go 0.1 mi
2. TANTALUM PL becomes N 43RD ST E. – go 0.6 mi
3. Turn RIGHT onto E. HARRIS RD – go 0.6 mi
4. Arrive at 4601 HAROLD SCOGGINS DR, MUSKOGEE

The transportation of the FMRI WIP residual materials via truck from the transload facility in Salt Lake City UT to the Energy Fuels in Blanding, Utah will be conducted by either of the following routes:

1. Start out going EAST on 400 South toward ORANGE STREET 0.4 miles)
2. Turn LEFT onto 1700 South – 0.3 mi
3. Turn RIGHT to merge onto I-80 toward Salt Lake – 4.1 mi
4. Keep LEFT to continue on I-15 S – 47.0 mi
5. Take Exit 257-B-A for US-6 toward Utah 156/Spanish Fork/Price/Main St – 0.5 mi
6. Take Exit 257B on the left for US 6 E toward Price
7. Keep left at the fork and merge onto US-6 E – 127 mi
8. Take the ramp onto I-70 E – 23.6 mi
9. Take the US-191 exit- EXIT 182- toward CRESENT JCT / MOAB.(0.30 miles)
10. Turn LEFT onto US-191 / UT-128. Continue to follow US-191.(106.1 miles)
11. Turn LEFT onto S 100 EAST ST.(<0.1 miles)
12. Turn RIGHT onto E 100 SOUTH ST.(<0.1miles)
13. End at [2972-3045] S Highway 191 Blanding, UT 84511 US

Transportation Schedule

Shipments in Muskogee will take place between 7AM and 5PM on the scheduled days (excluding holidays unless otherwise approved) to be determined prior to shipping. It is expected that from 7 to 42 intermodal shipments, one to five days each week, will occur.

Shipments in Utah will occur daily as the railcars arrive and are unloaded during normal working hours.

Operation	Duration	Cumulative Duration
1. Delivery of intermodals/cars to Muskogee	7 days	7 days
2. Loading, inspecting, manifesting, ship	5 days	12 days
3. Rail transportation to Salt Lake City, UT	7 days	19 days
4. Unloading, transport to Denison Mines, & return	7 days	26 days
5. Return Rail Transportation	7 days	33 days

Total turn time from Muskogee, Oklahoma to Muskogee, Oklahoma could range from 28 to 40 days.

Shipping Details

A. Pre-Inspection of Containers

Greenfield Logistics shall inspect all containers prior to mobilization to the FMRI Muskogee Facility. The inspection shall be conducted in accordance with the attached Intermodal Container Level 1 Inspection Form (GFLF-011). Greenfield Logistics shall provide a copy of the completed inspection form(s) to FMRI prior to the initial mobilization of the container(s) at the FMRI Muskogee Facility.

B. Loading/Unloading at FMRI Muskogee Facility

FMRI will be responsible for filling intermodals at the Muskogee Facility. FMRI shall provide equipment that has sufficient capacity and is suitable to safely handle the type of transportation equipment being provided by Greenfield Logistics. Prior to the loading of each container (upon return from the Energy Fuels Facility), a QC inspection shall be conducted by FMRI to ensure that the container is in proper condition for loading of WIP residual materials. This inspection shall be conducted using the attached Intermodal Container Level 1 Inspection Form (GFLF-011). The FMRI materials will be loaded by FMRI and unloaded at the Energy Fuels facility from the intermodal container in which originally loaded. FMRI and Greenfield Logistics will ensure that there will not be any leakage of radioactive material from the intermodal container. The FMRI materials will be braced, if necessary, so as to prevent shifting of lading under conditions normally incident to transportation.

C. Manifesting, Marking, Placarding

FMRI shall be responsible for the appropriate manifesting, marking, labeling, and placarding of all intermodal container shipments, in accordance with the Radioactive Material Profile and determination of the following for proper completion of shipping papers:

- Shipping name, hazard class and UN number for the material;
- Total quantity of manifested material;
- Surface, 2-meter, and 3-meter gamma survey results for each container;
- Dose reading in the cab of the transport vehicle;
- Alpha and beta/gamma swipe survey results for each container;
- Activity concentration and total activity content of individual radionuclides for each shipping container;
- Inspection of packaged containers prior to shipment to ensure compliance with 49 CFR Parts 171, 172, 173, and 177; and
- Determination of the total weight of each container shipment.

The attached Pre-Shipment Inspection Sheet (GFLF-012) may be used to perform the preshipment inspections to ensure compliance of each shipment with shipping and the receiving facility's guidelines.

As the FMRI materials are LSA-I that are being consigned as exclusive use, no marking, labeling, or placarding will be required, other than:

- i. The outside of each intermodal container may be marked UN2912;
- ii. The exterior of each intermodal container must be stenciled or otherwise marked "RADIOACTIVE-LSA" and "RQ", in accordance with 49 CFR 173.427(a)(6)(vi); and
- iii. Empty intermodal containers that have not been free released from the project in accordance with RG 1.86 must be marked UN2912 have affixed thereto an "Empty" label, in accordance with 49 CFR 173.428.

Each intermodal container shall have a unique sequential project number assigned to it at the FMRI site. This number will be entered on the Bill of Lading ("BOL") and attached to the intermodal container prior to shipment from the FMRI site. Upon arrival at the Energy Fuels facility, the truck driver will turn in all of his/her paperwork to the scale house operator who will verify that the BOL number, intermodal container number and project number assigned to the shipment match on all copies of the BOL. The scale house operator will also verify that the actual intermodal container number matches the BOL intermodal container number. Only original paperwork will be accepted. The scale house operator will sign the BOL, acknowledging receipt of the material at the Energy Fuels facility, if all of the paperwork is in order.

D. Transportation Logistics

Once the intermodals have been approved as meeting DOT, local, state, and federal regulations for shipment of the WIP residual materials, Greenfield Logistics shall complete the appropriate bills of lading and scheduling with the railroad for transportation of the WIP residual materials using either the Port of Catoosa transload facility or Johnston Terminal transload facility and commercial railways to the appropriate transload facility in Salt Lake City, UT. Greenfield Logistics will then receive the intermodal shipments at its transload in Salt Lake City, UT and transload the intermodals onto trucks and chassis for shipment to Denison mines in Blanding, Utah. Transportation Bills of Lading will again be completed by Greenfield Logistics and provided to transportation qualified truck drivers (including emergency contact information).

E. Exclusive Use

The FMRI materials will be consigned as exclusive use, within the meaning of 49 CFR 173.403. All intermodal containers will be used solely for this project. All initial, intermediate, and final loading and unloading will be carried out in accordance with the directions of FMRI or Greenfield Logistics. FMRI and the carrier will ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. FMRI will provide to the initial carrier specific written instructions for maintenance of exclusive use shipping controls, and include these instructions with the shipping paper information provided to the carrier by FMRI.

Once the intermodals have been emptied and released from the Energy Fuels, they will be transported back to the Salt Lake City transload facility and loaded onto the rail cars for return shipment to either the Port of Catoosa or Johnston Terminal, Muskogee, Oklahoma. Each intermodal container will be shipped as Empty Class 7 (radioactive) materials in accordance with the requirements set out in 49 CFR 173.428, unless the intermodal container is being released from the project, in which case it will be decontaminated for free release in accordance with RG 1.86.

APPENDIX A

TRANSPORTATION EMERGENCY RESPONSE PLAN

A.1 EMERGENCY RESPONDERS

In Salt Lake City, UT, the intermodals materials will be offloaded at the Greenfield rail transload facility. Greenfield Logistics maintains its corporate offices in Salt Lake City, Utah. Personnel from this location will respond to incidents in the Utah region.

For incidents that may arise during transport, Greenfield Logistics will investigate and resolve any problems in conjunction with the local trucking contractor. For spills along the rail and highway routes, Greenfield Logistics has an agreement for 24-hr Emergency Response with Eagle Construction & Environmental Services, LLC. Eagle will be the designated emergency responders along the entire route and have local response units that will respond from appropriate municipalities, with contact number of 877-742-4215.

A.2. EMERGENCY RESPONSE INFORMATION

Drivers will have a copy of the required emergency response information available for use at all times the WIP residual material is in transport. The railroad will also be faxed all required emergency response information. The emergency response information, including a 24-hr emergency response telephone number is required by 49 CFR 172.600. The emergency response number will be included on the shipping papers as required by 49 CFR. Emergency response information shall include:

- a.) North American Emergency Response Guidebook Information
- b.) 24 hr phone notification contact
- c.) Exclusive Use Instructions

A.3 COMMUNICATIONS

All truck transporters shall be accessible via Nextel or cellular phones in the event of an emergency situation or incident. During rail transport, in the event of an emergency or incident, the rail carrier shall contact the Greenfield Logistics home office as soon as applicable.

Emergency Reporting

- Upon learning of or becoming involved in an incident the driver should immediately stop the vehicle and assess the situation and the threat to human health and the environment. The term "incident" applies to but is not limited to an over-the-road accident, leaking transport vehicle, unintentionally getting lost, or encountering mechanical and/or natural problems that would keep the transportation unit from safely arriving on time at the assigned destination.
- For rail issues, the rail personnel shall follow the approved FRA guidelines and company procedures.

- In the event of a minor leak that poses no threat to human health or environment, take appropriate steps to control the leak.
- If there is a spill that requires State or Federal notification, Greenfield Logistics drivers, or those representing Greenfield Logistics, will immediately report the incident to Greenfield Logistics and/or the designated site emergency coordinators who will contact the applicable emergency response teams and/or authorities.
- If the emergency is of such magnitude as to threaten human health and/or the environment, the drivers will report the incident directly to the emergency response authorities and contact the facilities emergency response coordinators.

A.4 EMERGENCY CONTACTS

Greenfield Logistics Office 801-942-3757

After Hours Contacts:

Chris Hartley – Project Manager Mobile 801-592-2453

David Pitt – Operations Director Office 801-676-1579

Mobile 801-634-2718

Eagle Construction & Environmental 877-742-4215

National Response Center 800-424-8802

US DOT 800-467-4922

A.5 INCIDENT REPORTING REQUIREMENTS

Provide the following information about the incident when reporting it to Greenfield Logistics, FMRI or emergency response authorities:

- Name of person reporting the incident.
- Phone number where reporting person can be contacted.
- Date, time and location of incident.
- Brief description of the incident.
- Volume of spill and source (if any).
- Extent of injury (if any).
- Type of vehicle involved.
- US DOT Number, License Number of transport vehicle, railcar number, etc.
- Weather conditions at spill site.
- Extent of any contamination to land, water, or air (if known).
- Actions taken so far.

A.6 MANIFEST REPORTING REQUIREMENTS

Report the following information from the Manifest/Bill of Lading:

- Shipping name, hazard class and UN number for the material spilled.
- Name and ID Number of shipper; and
- The shipping name, hazard class, and UN number of any other material carried on the same vehicle.
- Total quantity of shipped material.

Drivers / Rail Conductors shall not leave their vehicles/conveyances to make such notifications in sections A.8 and A.9 unless there is no danger to the general public or unless the area is under guard by a responsible individual. If necessary, they are to have a responsible individual make such notification while they remain with the vehicle.

A.7 GUIDELINES FOR REPORTING

1. Generator (FMRI) – Greenfield Logistics will notify AWMS and the generator (FMRI) whenever there has been a release or incident, which involves the WIP residual materials. This will be completed for any amount of acute or non-acute release of residual materials.
2. The National Response Center and Department of Transportation will be contacted if any of the following occur:
 - Someone is killed or receives injuries requiring hospitalization as a result of WIP residual materials.
 - Estimated property damage exceeds \$50,000.00.
 - An evacuation of the general public occurs, lasting one hour or more
 - One or more major transportation arteries or facilities are closed or shutdown for one hour or more
 - The operational flight pattern or routine of an aircraft is altered
 - The incident presents a continuing danger to human health or the environment
 - Accident/spill involves radioactive material or etiological agents
3. In case the driver/carrier cannot reach the Greenfield Logistics office by phone, the driver/carrier shall immediately contact the designated responder or local police and fire departments by cell phone.

A.8 WRITTEN REPORT REQUIREMENTS

The Emergency Coordinator will prepare the following written reports after the incident:

1. Greenfield Logistics shall report in writing, in duplicate, on DOT Form F5800.1 to the Department within 30 days of the date of discovery, each incident that occurs during the course of transportation (including loading, unloading and temporary storage) in which any circumstances set forth in Section X occurs.
2. If any quantity of WIP residual materials is released include the following with the 5800.1 Form:
 - a. A copy of the WIP residual materials manifest.
 - b. An estimate of the quantity of material removed from the scene, the name and address of the facility to which it was taken, and the manner of disposition of any removed WIP residual materials must be entered in Section IX;
 - c. A copy of the report shall be retained for a period of two years;
 - d. Forward forms 5800.1 to the following upon completion:
Information Systems Manager
DHM-63
Research and Special Programs Administration
Department of Transportation
Washington, D.C. 20590
 - e. State environmental agencies are sent copies of the DOT written report, with any additional information required by the state in which it occurred.
 - f. OSHA must be informed if anyone is killed or if five or more people are injured as to require medical care.

A.9 RESPONSE ACTIONS

A. Fire and Explosion

1. Personnel at the scene immediately clear the area and summon the fire department regardless of how small the fire or explosion appears.
2. Greenfield Logistics / Site Emergency Coordinators shall be informed immediately.
3. If the fire or explosion, or any subsequent release of hazardous and or radioactive materials could threaten human health or the environment, notify local authorities and help them determine whether surrounding areas should be evacuated.
4. ONLY if a fire is small and well contained will personnel wearing protective clothing attempt suppression with hand extinguishers.

5. Personnel will assist fire fighters with information (i.e. nature of materials and associated hazards). Only under the direction of the fire department will personnel become involved in fire suppression.
6. Run-off water or released wastes must be controlled (as for any other discharge) by use of dikes, berms or absorbents. All storm drains, sewers, streams or surface water must be protected if at all possible. These activities should be concurrent with fire suppression activities.
7. When the immediate problem of fire or explosion is controlled, clean up and decontamination activities will be conducted as for a discharge.

B. Personnel Protection

As dictated by the actual hazards present, the following precautions may be taken:

1. Response personnel don appropriate personal protective equipment.
2. Absorbents or impervious material, such as plastic sheeting is spread under the vehicle to prevent or minimize ground contamination.
3. Isolation of leaking containers from uninvolved personnel and other containers.
4. If ignitable materials are involved, fire extinguishers should be kept at the scene and the fire department that they may be needed.
5. Cordoning off the work area via ropes and/or warning signs with pre-designated spill kits.
6. Prevent smoking, sparks, and open flames in the vicinity of flammable or combustible materials.

C. Evacuation Guidelines

If the incident could threaten human health or the environment, notify local authorities and help them determine whether surrounding areas should be evacuated. Notify the applicable emergency coordinator so that the National Response Center or other agencies may be contacted if necessary.

D. Containment Procedures

Containment of discharged material should be accomplished by:

1. Attempt to stop leaks from containers using plugs, bolts, duct tape or harnesses as appropriate. The container may also be moved so that the leak is uppermost.
2. Diking or berming on firm or impervious surfaces using vermiculite, Oil Dry, and/or Soil or Hazard pillows, taking special care that materials do not escape to storm drains, sewers, streams or other surface water.
3. Ditching around discharges onto soil using shovels.
4. Leaking containers may be opened and inspected with the intent to find any free liquids and add absorbents to stop the leakage. All required precautions should first be met.

5. To the extent practicable, spills of radioactive materials should be covered immediately with a tarpaulin or the equivalent to prevent dispersion of particulate into the air.

E. Cleanup Guidelines

Cleanup operations may include, but are not limited to the following steps:

1. Free standing liquids absorbed and placed into a suitable container.
2. Solids, semisolids, absorbents, etc. shoveled or swept up should be placed in appropriate containers, and properly disposed of.
3. Residual materials on the ground may be removed by:
 - a. Digging up contaminated soils/pavement if necessary.
 - b. Neutralization, if appropriate, i.e.; acids or bases.

F. Decontamination Guidelines

1. Emergency coordinators will determine the extent of any potential pollution or contamination by sampling and analysis of soil, water, vegetation, etc. The sampling necessity may be determined by the nature of the incident, quantities involved, types of surface exposed and hazards associated with materials, including factors such as toxicity and environmental persistence.
2. All disposable contaminated items, such as: gloves, clothing, respirators and hand tools are placed in appropriate labeled shipping containers.
3. Non-disposable equipment is decontaminated using appropriate decontamination agents and techniques, and debris from this decontamination placed in appropriately labeled containers.

G. Spills into Waterways – Streams, Rivers, Lakes, Ponds, etc.

In the event that such spill occurs, it must be reported to Greenfield Logistics and the appropriate authorities immediately.

H. Vehicle Inspection

Contaminated vehicle/railcar/container or area is checked for any damage, which may have been caused by the leak, such as corrosion.

I. Transport/Disposal Requirements

All drums or containers are manifested, sealed and labeled per state, EPA and DOT guidelines and transported to the appropriate receiving facility or returned to the generator.

APPENDIX B

[RESERVED]

{A transportation security plan is not applicable by Title 49 CFR §172.800(a)}

APPENDIX C

TRANSPORTATION DOCUMENTATION

Bill of Lading

Instructions to Drive for Exclusive Use Shipment

Emergency Response Guide 162

Radiological Survey Form

Intermodal Container Level 1 Inspection Form (GFLF-011)

Intermodal Container Pre-Shipment Inspection Form (GFLF-012)

Page 1: Bill of Lading

STRAIGHT BILL OF LADING – SHORT FORM – Original – Not Negotiable

BOL# - FM-

Shipper's No. 091613 550 008VX

Carrier 1: Triad Transport Inc

Carrier 2: BNSF Railroad

Carrier 3: Greenfield Logistics

Received, subject to the classification and tariffs in effect on the date of this Bill of Lading:

At _____ date: _____ from Muskogee, Oklahoma

The property described below, in apparent good order, except as noted (contents and conditions of packages unknown) marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any persons or corporation in possession of the property under this contract) agrees to carry to its place of delivery at said destination, if on its own water line, otherwise to deliver to another carrier on the route to said destination, and as to each party at any time interested in all or any of said property, that every service to be performed shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Uniform Domestic Straight Bill of Lading set forth in Uniform Freight Classification in effect on the date hereof) which are hereby agreed to by the shipper and himself and his assigns.

(Mail or street address of consignee – for notification)

TO: ENERGY FUELS 6425 South Highway 191 Blanding, UT 84511		FROM: FMRI, Inc. 10 Tantalum Place Muskogee, OK 74403	
Route: Muskogee, Ok to 9(INSERT ROUTE) Blanding UT.			
1 st Tractor # - (INSERT #)		1 st Trailer # - (INSERT #)	
2 nd Tractor #		2 nd Trailer #	
1 st US DOT Hazmat Registration No. (INSERT #)		2 nd US DOT Hazmat Registration No. (INSERT #)	
No. of Packages	Description of Package	Weight (Subject to Correction) Gross Net	
1	Exclusive Use Shipment UN2912 Radioactive material, low specific activity (LSA-I) 7 RQ Th(nat) and U (nat) solid, fluoride TBq	(INSERT #)	(INSERT #)
Emergency Response Telephone Number: (Insert#)		<u>Labels:</u> Excepted - 49CFR 173.427 (a) (6) (vi). <u>Placards:</u> Not required - 49CFR 172.504, Table 1, footnote 1.	
This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Shipper: FMRI, Inc Per: _____ Date: _____		Carrier 1:	
		Per: _____ Date: _____	
		Carrier 2:	
		Per: _____ Date: _____	
Carrier 3:		Per: _____ Date: _____	
Energy Fuels Facility Owner or Operator: Certification of Receipt of material covered by this manifest			
Signature: _____		Date: _____	

**INSTRUCTIONS TO THE DRIVER
FOR THE EXCLUSIVE USE SHIPMENT OF**

BILL OF LADING # (INSERT #)

radioactive material, low specific activity (LSA-I), 7, 2912, RQ

1. This shipment contains bulk quantities of radioactive uranium and thorium bearing material and is being shipped as exclusive use in accord with 49 CFR 173.427.
2. The driver shall maintain all seals, labels and markings while in transit.
3. The vehicle and intermodal container configuration shall not be altered in such a manner as to change radiation levels measured outside the vehicle or container.
4. The driver will not enter the sealed container under any circumstances.
5. The driver will not stop to load or unload cargo from sealed container during transit.
6. In the event of an emergency such as fire, leak, accident or loss of material, the driver will immediately telephone:

24 Hour Emergency Telephone: (Insert #)

I have read and understand the instructions given above.

Carrier 1:
Driver Signature:

Date:

Carrier 2:
Driver Signature:

Date:

Carrier 3:
Driver Signature

Date:

UN2912, radioactive material, low specific activity (LSA-I), 7, RQ

GUIDE
162

RADIOACTIVE MATERIALS
(LOW TO MODERATE LEVEL RADIATION)

ERG 2012

ERG 2012

RADIOACTIVE MATERIALS
(LOW TO MODERATE LEVEL RADIATION)

GUIDE
162

POTENTIAL HAZARDS

HEALTH

- Radioactive presents minimal risk to transport workers, emergency response personnel and the public during transport (accidents). Packaging designed to minimize the potential hazard of radioactive release.
- Undamaged packages are safe. Contents of damaged packages may cause higher level radiation exposure or burn exposure and internal radiation exposure if contents are released.
- Low radiation hazard after material is inside critical area. If material is released from package or bulk container, hazard will vary from low to moderate. Level of hazard will depend on the type and amount of radioactivity, the kind of material it is in, and the container it is in.
- Some material may be released from packages during accidents of moderate severity but risk to people are not great.
- Released radioactive materials or contaminated objects usually will be within packaging leak.
- Items include use warnings of bulk and packaged materials will not have "RADIOACTIVE" label. Placards, markings and shipping papers provide identification.
- Some packages may have a "RADIOACTIVE" label and a second hazard label. The second hazard is usually greater than the radiation hazard as shown in the GUIDE as well as the response GUIDE for the second hazard class code.
- Some radioactive materials cannot be detected by commonly available instruments.
- Personnel concerned of exposure may cause low-level pollution.

ENVIRONMENTAL

- Some of these materials may burn, but most do not ignite easily.
- Uranium and Thorium metal cuttings may ignite spontaneously if exposed to air (see GUIDE 136).
- Minerals are avoided and may contribute to contamination (see GUIDE 121).

PUBLIC SAFETY

- CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside tank cover.
- Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and details of emergency.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Decontaminate exposed persons or equipment exposed to be contaminated; decontaminate water and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and additional firefighters protective clothing will provide adequate protection.

EVACUATION

- Large Spill
 - Consider initial downwind evacuation for at least 100 meters (330 feet).
- Fire
 - When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

EMERGENCY RESPONSE

SPILL

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from the area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of the zone.

Small Fire

- Use chemical, CO₂, water spray or regular foam.

Large Fire

- Water spray, fog (flooding amounts).
- Once fire-control water for later disposal.

SPILL ON LEAK

- Do not touch damaged packages or spilled material.
- Cover liquid spill with sand, earth or other non-combustible absorbent material.
- Close to collect large liquid spills.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

RESTAIN

- Call 911 or emergency medical service.
- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, wipe from skin immediately; flush skin of eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material etc. get a medical hazard to health care personnel, equipment or facility.
- Ensure that medical personnel are aware of the materials involved, take precautions to protect themselves and prevent spread of contamination.

RADIOLOGICAL SURVEY FORM

Phase I Transportation – Intermodal Survey

Survey Type: Release of IMC for transport

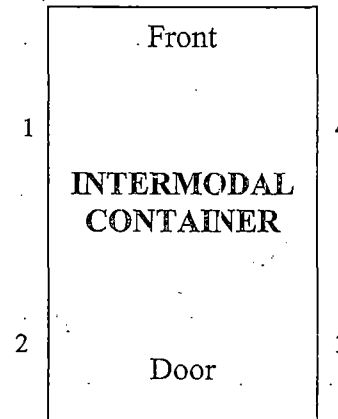
Inst S/N _____ Model No. _____

Cal Due Date _____

Inst S/N _____ Model No. _____

Cal Due Date _____

	Exposure Rate	Removable	
Sample #	Contact mrem/h	alpha dpm/cm ²	beta/gamma dpm/cm ²
1			
2			
Door			
3			
4			
Front			
Top			
Bottom			



Exposure Rate

Cab: _____
mrem/hr

2 meter: _____
mrem/hr

3 meter: _____
mrem/hr

Limits:

1. Exposure Rate

- No reading >1 rem/hr at 3 meters from surface of intermodal [49CFR173.427(a)(1)].
- No readings >200 mrem/hr on surface of intermodal [49CFR173.441(a)], or else
 - No readings >200 mrem/h at any point on the vertical planes, upper surface of load, and lower surface of vehicle [49CFR173.441(b)(2)], and
 - No readings > 10 mrem/h at any point 2m from vertical planes projected by outer edge of vehicle (excluding top and underside) [49CFR173.441(b)(3)], and
 - No readings > 2 mrem/h in any normally occupied space [49CFR173.441(b)(4)]

2. Removable

- No reading > 200 dpm/ 300cm² alpha or 1000 dpm/ 300cm² beta/gamma [a conservative application of License Condition 33].

Bill of Lading # FM- _____

Intermodal No. _____

Performed by / Date _____

Reviewed by _____

GREENFIELD LOGISTICS, INC.
GREENFIELD LOGISTICS, LLC
INTERMODAL CONTAINER – LEVEL 1 INSPECTION
FORM NO. GFLF-011

1	MANUFACTURER:	2	INSPECTION DATE: _____ / _____ / _____
3	STYLE OF CONTAINER:	4	LOCATION OF CONTAINER
5	EQUIPMENT NUMBER:	6	MFR. SERIAL NUMBER

Note: Any reject item requires corrective action before container can be released. Enter corrective action under comments section.

ITEM TO BE CHECKED	ACCEPT	REJECT	N/A	COMMENTS
7	Placard Mounts – Free of old placards			
8	Document Holders – Empty and in good shape			
9	Decals – look good and correct to specifications			
10	Equipment Serial Number – Legible and correct			
11	Interior Surfaces – Cleanliness			
12	Corner Castles – Integrity			
13	Structural Integrity – Check welds, inside and outside			
14	Structural Integrity – Metal surfaces intact w/ no penetrations			
15	Nose Rollers – Move freely			
16	Wheels – Not broken or bent			
17	Wheels – Up with pins in place			
18	Cable Hook – In good condition, check welds			
19	Door Ratchet Binders – Function correctly w/out binding			
20	Door Ratchet Binders – Adequate grease			
21	Door Grab Handles – Function correctly w/out binding			
22	Door Chains – Function correctly			
23	Door Hinges – Function correctly			
24	Door Gasket – check resilience and grease			
25	Metal Lids(s) – Welds or seams contiguous w/out gaps			
26	Metal Lids(s) – Good binders – move freely w/out binding			
27	Metal Lids(s) – Gasket quality			
28	Metal Lids(s) – Seal correctly			
29	Metal Lids(s) – Verify lid stops in place – both sides			
30	Metal Lids(s) – Open lid to both sides to assure stops work			
31	Tarp – Good quality w/out leaks			
34	Liner Holder Hooks – In good shape			
35	Incoming Survey performed and approved for filling by facility RSO.			
36	Reject items must be repaired or replaced – use this space for additional comments:			
37	Note: If reject conditions are noted above, red tag container and check the box below, then sign. <input type="checkbox"/> Rejection Initial inspection by: _____			
38	Note: Check box below only after all repairs have been made, or if the container was found acceptable. <input type="checkbox"/> Acceptance Final acceptance by: _____			

Form No. GFLF-011 rev. 11/15/06

GREENFIELD LOGISTICS, INC.
GREENFIELD LOGISTICS, LLC
INTERMODAL CONTAINER – PRE-SHIPMENT INSPECTION
FORM NO. GFLF-012

INSPECTOR:		INSPECTION DATE:
		____/____/____
NUMBER OF CONTAINERS:		EQUIPMENT NUMBER:

Note: Any rejected item requires corrective action before container can be released. Enter corrective action under comments section.

ITEMS TO BE CHECKED PRIOR TO LOADING	ACCEPT	REJECT	N/A	COMMENTS
1 Any free liquids in the container?				
2 Is the swing door closed, secured, and sealed properly?				
3 Is the metal lid closed, secured, and sealed properly?				
4 Are all chains in place, tight, and ratchet handles secured?				
5 Are all applicable placards and labels in their proper placement?				
6 Are all corner castles in good condition?				
7 Is all shipping paperwork complete and accurate?				
8 Has a free release survey been performed and approved by the Facility RSO (per DOT Regs)				
ITEMS TO BE CHECKED AFTER LOADING ONTO TRUCK OR RAILCAR				
1 Are all iso-connectors in place and properly locked?				
2 Are all applicable placards and labels visible and intact?				
3 Any observable damage to container prior to loading? Log any damage at the bottom or on the back of this form.				
CONTAINER NUMBERS:				
1				
2				
3				
4				
5				
6				
7				
8				
Note: Check box below only after all inspections have been made and all are found acceptable. Acceptance				
Final acceptance by:				

Form No. GFLF-011 rev. 11/15/06

PERIMETER ACTIVITY

Start Date 9/9/2015

Finish Date 9/16/2015

Location	pump s/n	calibration due date	time on	time off	Activity (dpm)	I TV (mL)	I CF (dpm/uCi)	uCi/mL	ADMIN. LEVEL (uCi/mL)	ACTION LEVEL (uCi/mL)	Flow On cfm	Flow Off cfm	Flow Minutes	Ft ³ to mL
NW	29	14-Apr-16	7:51	7:38	-1.70E-01	273218380	2.22E+06	-2.8E-16	2.85E-14	4.30E-14	1	1	10067	273218380
NE	5	14-Apr-16	7:55	7:41	-7.50E-01	249435480	2.22E+06	-1.4E-15	2.85E-14	4.30E-14	1	1	10066	249435480
SE	353	14-Apr-16	7:59	7:44	1.20E-01	273164100	2.22E+06	2.0E-16	2.85E-14	4.30E-14	1	1	10065	273164100
SW	140	14-Apr-16	8:00	7:45	4.10E-01	249410700	2.22E+06	7.4E-16	2.85E-14	4.30E-14	1	1	10065	249410700
BKG	4275	14-Apr-16	8:06	7:51	-4.60E-01	225657300	2.22E+06	-9.2E-16	2.85E-14	4.30E-14	1	1	10065	225657300
ENV	170	14-Apr-16	8:11	7:55	1.20E-01	273136960	2.22E+06	2.0E-16	2.85E-14	4.30E-14	1	1	10064	273136960
BLANK		n/a	n/a											

Reviewed _____

PRSO

Date _____

revised
Phase I Implementation Work Plan
USNRC Materials License No. SMB-911
Amendment No. 12
FMRI, Inc.
Muskogee, Oklahoma

Prepared For:

FMRI, Inc.
10 Tantalum Place
Muskogee, OK 74403

July 2007

Prepared By:

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Muskogee, OK 74403

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INTRODUCTION

This revised Phase 1 Implementation Work Plan (WP) has been prepared to address applicable regulatory requirements and specific license conditions in U.S. Nuclear Regulatory Commission (NRC) Materials License No. SMB-911, Amendment No. 12, Docket No 40-7580 (License). In particular, Condition No. 37(a) of the License requires that a plan be submitted to the NRC by August 2, 2004, in accordance with 10 CFR 40.42(g)(4)(ii), to describe the planned decommissioning activities associated with the work-in-progress (WIP) residual materials contained in Pond Nos. 2 and 3 at the FMRI Muskogee, Oklahoma facility. These activities are identified in the January 14, 2003 Decommissioning Plan (DP) (amended May 8 and July 24, 2003) as Phase 1 of the decommissioning effort.

This WP is also intended to address Condition Nos. 50 and 52 of the License. These conditions are addressed in chapters 5.0, 7.0, and 8.0 of this WP.

As stated, Phase 1 of the decommissioning activities involves remediation work associated with Pond Nos. 2 and 3. Pond Nos. 2 and 3 (located in Area II as described in the DP) accepted residues from the WIP produced during the digestion and liquid-liquid exchange processes that occurred in the Chemical "C" Building. Materials stored in the ponds include digested ores and slags and fluid comprised of hydrogen fluoride (HF) and sulfuric acid (H_2SO_4) containing methyl isobutyl ketone (MIBK), heavy metals, and low-level radioactive species. During Phase 1 of decommissioning activities, the residual materials contained within Pond Nos. 2 and 3 will be excavated and removed for off-site disposition. In accordance with Condition No. 30 of the License, the excavation of materials will include WIP material that has migrated from the ponds. For the purposes of this WP, WIP that has migrated from the ponds shall be defined as material that exhibits the same physical characteristics as the sludge-like material contained in the ponds.

According to plant records, Pond No. 2 was placed into service in 1960 and was closed in place in 1979. The materials in the pond were covered with a polyvinylchloride sheet, a polyethylene sheet, and between 6 and 24 inches of soil to support vegetation. The pond is approximately 350 feet in length, 150 feet in width and 12 feet deep with no engineered liner or leak detection system.

Pond No. 3 was constructed by excavating the alluvial soils to the top of the local shale bedrock. Because groundwater was encountered in this alluvium, a French drain network was installed around the structure to collect groundwater and route it to a wet well (collection sump). (The original design of the French drain collection system allowed groundwater to discharge to a small valley east of Outfall 003.) The sump discharge was then pumped from the sump to Pond No. 3 or to the plant's process water treatment system. A single synthetic liner was installed in the pond with the intent to retain all fluids and residues discharged to the structure. According to plant records, Pond No. 3 was constructed in 1979. The pond is approximately 400 feet in length, 250 feet in width and 25 feet deep with no leak detection system.

This WP and all contractor specific implementation plans are to be developed using applicable NRC regulations and FMRI's policies, programs, procedures, and instructions.

1.0 SITE PREPARATION

After the ancillary work plans, project plans and specifications, and contractor procurement activities have been completed, preparations must be made in the field to perform the Phase 1 tasks. These preparations are discussed below.

1.1 Security

The facility is completely enclosed by a security fence designed to prevent unauthorized entry. The fence is inspected and maintained by FMRI and its contractors to ensure the fence is not compromised and remains functional. A security gate is in place and will be operated by FMRI to control site access. All personnel entering the active work area will be logged in and out and will not gain access to active work areas unless they are 1) authorized to do so by FMRI or its agents, 2) appropriately trained, and 3) outfitted with required personal protective equipment (PPE).

During non-working hours, the security gate will be locked. Access to the plant shall be gained through proper notification to FMRI personnel.

1.2 Mobilization/Demobilization

Prior to the start of remediation activities, resources must be mobilized to the site and established to allow for work to begin. These resources include labor, equipment and supplies necessary to perform the required project tasks. For example, heavy equipment selected by the contractor to excavate the material from the ponds will be transported to the site, off-loaded, serviced, fueled, and placed in the active work area. Support facilities (office trailers, staging locations, decontamination areas, sanitary facilities, etc.) will be located on-site by the contractor as necessary. The contractor will be responsible for proper utility connections to such support facilities, including but not limited to, water, electric, and phone services. Monitoring equipment will be brought on-site, along with PPE and common field supplies including hand tools, power equipment, etc. The contractor will be responsible for all labor, equipment and supplies necessary to complete Phase 1 decommissioning activities, unless agreed upon through prior arrangement with FMRI. These resources must be marshaled and be in place prior to Phase 1 implementation.

At the project's end (based on the terms of the contract between the contractor and FMRI), the contractor will demobilize the remaining resources from the site. FMRI will ensure that all equipment and supplies have been properly decontaminated, surveyed, and released if used in active work areas. Support facilities (decontamination pads, office trailers, etc.) will also be surveyed and released prior to removal and utility connections will be terminated unless directed otherwise by FMRI. The site will be left in an improved condition as agreed between the contractor and FMRI.

1.3 Access/Roads/Haulage

The contractor will be responsible for the layout and construction of site access roads to allow for the efficient access of equipment and vehicles to and from the active work area. This layout, when developed, will be evaluated to ensure that traffic on the site moves without restriction while limiting

the potential for cross-contamination. Prior to releasing vehicles leaving the work area, the vehicles will be decontaminated (if necessary) and surveyed to ensure they meet appropriate release criteria.

Hauling vehicles entering the site will be logged in and tracked by manifest number to determine the number of trucks entering and leaving the site and to track material flow from the site to the designated off-site facility. Hauling weights will be determined via load cells within a front-end loader, or by other means determined by the contractor and approved by FMRI.

Existing access road and parking areas will be used to the extent practicable. Access road construction will be dictated by contractor needs but will most likely involve the placement of a geotextile followed by a suitable thickness of coarse aggregate with fines to promote tight compaction. Vehicle speeds within the site perimeter will be limited to 15 mph maximum. Backup alarms will be required on all construction vehicles. All vehicles and equipment shall be in proper working order at all times.

1.4 Equipment

The majority of the construction equipment anticipated for Phase 1 activities is commonly used in commercial and industrial earthwork. Equipment used will most likely include; excavators, loaders, tractors, tractor-scrapers, backhoe-loaders, graders, compactors, trucks, tanker trucks, frac tanks, etc. The contractor will be responsible for selecting the equipment necessary to complete the project in a safe, cost effective, and timely manner.

More specialized equipment may be required to install a sheet pile cutoff wall around the active work area. In addition, equipment needed to monitor site conditions and to provide adequate radiation safety and industrial health and safety coverage will be the responsibility of FMRI.

1.5 Decontamination Procedures

The focus of the contamination control program is on surveys of skin, protective and personal clothing, fixed and removable surface contamination, transport vehicles, equipment, and supplies. The contamination control program will be as follows:

- Control both access to (and work hours in) contaminated areas by workers, as required by 10 CFR 20.1702.
- Perform surveys to supplement personnel monitoring for workers during routine operations, maintenance, cleanup activities, and special operations.
- Follow the procedures for surveys as indicated in Regulatory Position C.1, Types of Surveys, in Regulatory Guide 8.21.
- Specify removable surface contamination action limits (i.e., actions taken either to decontaminate a person, place, item or area, or to restrict access, or to modify the type or frequency of radiological monitoring) for areas.
- Specify that calculations of the surface activity of contaminated materials use a 4π surface-efficiency factor for gamma emitters.
- Require surveys of air quality based on Regulatory Guide 8.25.

Equipment and personnel will be decontaminated as necessary through physical means either through mechanical removal or application of wet methods, as determined by the contractor to fulfill the performance specifications. Decontamination facilities will be established during mobilization and set up activities. These facilities will most likely include a decontamination station with utilities and appropriate supplies for remediation personnel (contained within a trailer or similar structure) and a decontamination pad for larger equipment. Equipment and personnel will not be permitted to leave active work areas and the decontamination facilities until surfaces are determined uncontaminated. Appropriate documentation of decontamination activities will be maintained by FMRI. Any elevated survey or air monitoring results shall require immediate notification to the FMRI Radiation Safety Officer.

Contaminated materials and disposable supplies generated as a result of decontamination activities will be disposed of in accordance with the pertinent planning documents and applicable environmental regulations.

1.6 Water Management

Remediation of groundwater is not a component of Phase 1 decommissioning activities. However, management of groundwater, surface water, decontamination water, and interstitial water within affected material will be necessary during Phase 1 remediation activities. It is anticipated that the existing groundwater treatment program, utilizing the existing waste water treatment plant, will be maintained during Phase 1 decommissioning activities. Surface water will be managed so that contact with affected materials is controlled and surface water run-on into affected areas is minimized.

The existing waste water treatment plant at the site will most likely be used to process contaminated water that may be collected from excavation activities, material dewatering, decontamination activities, and surface water that may collect in open excavations, unless other means or processes are approved by FMRI. Contaminated water may be collected in portable tanks or other constructed facilities, as determined necessary by the contractor. The water will then be transferred from temporary storage, or directly from excavations, to the treatment plant for processing and eventual discharge through FMRI's OPDES permitted outfall.

The construction of storm water diversion structures is anticipated in order to prevent the introduction of storm water into the active work area, and to prevent the loss of potentially contaminated storm water from the active work area. Diversion channels and berms will serve this purpose. The contractor will be responsible for the design, construction, and maintenance of the storm water management controls at the site. Stormwater discharge will be controlled in accordance with the requirements of FMRI's OPDES Permit.

1.6.1 Effluent Sampling and Monitoring

Excess water may be sampled and analyzed for radionuclides to determine if it is contaminated. Sample frequency will be dictated by either the applicable permit conditions or an agreement with our off-site disposal facility. FMRI will be responsible for all permitting requirements and off-site disposal agreements to maintain compliance with applicable environmental regulations. Final water management arrangements will be determined at a later date based on contractor recommendations and approval by FMRI.

1.7 Dust Control

Two factors should serve to limit the amount of dust generation at the site during Phase 1 activities. First, the residual materials to be excavated are anticipated to be wet of optimum moisture content and therefore less subject to potential dusting concerns. Second, the site access roads will be constructed with coarser grained materials to alleviate this particular concern. However if dusting should become a problem, the contractor can dampen the problem areas with water to prevent fines from becoming airborne. The vehicle decontamination station will also serve to remove finer grained materials from the vehicles leaving the active work area; and the site in general. Finally, stockpiles may be covered with tarps when not in active use.

1.8 Erosion and Sedimentation Controls

FMRI will define project erosion and sedimentation (E&S) controls. E&S controls must be in place and operational before Phase 1 operations can begin. Storm water discharges from the site must meet permitted discharge limits. E&S controls shall be properly constructed and maintained until the disturbed areas are adequately stabilized. These controls may include:

- diversion channels and berms,
- sediment traps,
- temporary covers (such as plastic sheeting or tarps),
- silt fence and/or hay bale barriers,
- riprap linings,
- erosion control matting, and
- vegetative strips.

An inspection schedule and reporting protocol shall be established by FMRI. A record of inspection and all repairs made will be noted and kept on site. At a minimum, all E&S controls will be inspected weekly during Phase 1 decommissioning activities, every 2 weeks during inactive periods, and within 24 hours after each rainfall event exceeding 0.5 inch. During periods when rain is occurring continuously for days, control measures will be inspected at least daily. Repairs and maintenance will be performed as soon as practical.

2.0 EXCAVATION

The excavation and disposition of residual materials from Pond Nos. 2 and 3 are the primary focus of the Phase 1 decommissioning activities. It is anticipated that approximately 16,000 tons (20 percent moisture content by weight) of residues from the WIP will be excavated. In accordance with Condition No. 30 of the License, the excavation of materials will include WIP material that has migrated from the ponds. For the purposes of this Phase 1 WP, WIP that has migrated from the ponds shall be defined as material that exhibits the same physical characteristics as the sludge-like material contained in the ponds. In addition, the polyvinylchloride sheet and the polyethylene sheet covering the material in Pond No. 2 and the synthetic liner in Pond No. 3 will be removed for proper disposition.

An anticipated activity associated with the excavation may involve the installation of a sheet pile cut-off wall around the Phase 1 work area to provide lateral support to the excavation and to limit groundwater intrusion. It is anticipated that the sheet piles will be driven to a depth below the projected base of the pond excavations (preferably to bedrock). The individual piles will be interlocked to provide for additional stability and to enhance the groundwater barrier. Sheet pile installation will be monitored by the contractor to insure the piles are driven without warping or damage. The depth of each pile will be monitored closely to accurately determine the base of the wall and the allowable depth of excavation. The stability of the wall, and consequently the excavation, may be compromised if the excavation undermines the interior support of the piling. The contractor will be responsible for the design, construction and installation of a sheet pile cut-off wall, or alternative means.

Groundwater, residual pore water, and collected storm water that may be encountered within the excavation after a sheet pile wall is installed will be pumped from the excavation and handled as described in Section 1.6.

It is anticipated that the contractor will perform the excavation with commonly available excavation equipment such as hydraulic excavators. The excavation will be staged in a logical manner so that materials will be removed without compromising excavation stability or the traffic flow of equipment and transportation vehicles. Double handling of the materials will be limited to the extent practicable. Materials removed from the excavation will be transported using on-site transport vehicles to the designated stockpile area for processing.

3.0 MATERIAL PROCESSING

After the materials are removed from the excavation, the materials may be transported and stockpiled on-site for processing, depending on their condition. An area east of the Chem C Building has been prepared and used as a stockpile and material processing area. The area is lined with 60-mil high-density polyethylene geomembrane, or equivalent, to prevent migration of contamination to the subsurface. A working surface of common fill or other earthen materials may be placed on the liner to facilitate heavy equipment operations. Berms and ditches will be constructed at the perimeter to contain precipitation falling within the area and to prevent storm water intrusion from exterior areas.

The material will be stockpiled to allow for tracking by excavation location, date of excavation, and by stockpile identification. The contractor will be responsible for documenting material movement during this process. Once an acceptable quantity of material is ready, the material will be air dried reduce the water content. Radiological controls shall be used to eliminate or control the potential spread of contamination including the potential spread of airborne contamination. After drying, the material will be loaded and transported off-site for final disposition.

4.0 EXCAVATION MAINTENANCE

Backfilling of the excavation created during Phase 1 decommissioning activities will not take place until additional site characterization is completed at a future date. The excavation will be maintained by FMRI and/or FMRI's designated contractor after Phase 1 is complete to ensure a secure and stable work environment. The contractor will be required to leave the open excavation in a suitable condition with allowances for appropriate site controls. Site controls may include construction fencing, site access restrictions, water management facilities, and the like.

5.0 MATERIAL MANAGEMENT

5.1 Transportation Management – Pond Residuals

Materials removed during excavation will either be loaded directly for transport off-site or stockpiled for processing as described in Section 3.0. Material tracking based on excavation location, excavation date and stockpile designation, as applicable, will continue until the material is loaded for transport. The material will be checked by the contractor or FMRI prior to loading, as required by the project specifications, to ensure the material meets the appropriate acceptance criteria dictated by the receiving facility.

Manifests will be created for each unit of transport (anticipated to be intermodal container) to allow for complete material tracking. A copy of the signed manifests as accepted by the recovery facility, with weight and tracking information included, will be maintained on site. FMRI will be responsible for the logistics associated with transportation management, including the scheduling of the rail cars or transportation vehicles, and the coordination with the specified recovery facility. FMRI shall be responsible for any DOT fees for shipping hazardous materials (annual fees).

5.2 Acceptance Criterion – Pond Residuals

FMRI will be responsible for the selection of the recovery facility or facilities for Phase 1 decommissioning activities. Once the identity of the facility or facilities has been established, acceptance criterion will be identified and planned for as part of the material management portion of the project.

5.3 Remediation Waste Management Program (RWMP)

The purpose of the solid waste management program is to ensure that controls on solid waste stream generation, storage, handling, and disposal and/or reclamation will be protective of the public H&S and in accordance with NRC requirements. The applicable NRC requirements are 10 CFR Part 20 (Subpart K), 10 CFR 61.55, 61.56, 61.57, and 71.5.

The solid waste management program will include the following:

- Specify the types of solid radioactive waste that are expected to be generated during decommissioning operations, including (but not limited to) structural and component metal, concrete, activated components, contaminated piping, wood, and plastic.
- Specify the estimated volume, in cubic feet, of each solid radioactive waste type expected to be generated during decommissioning operations.
- Specify the radionuclides (including the estimated activity of each radionuclide) in each estimated solid radioactive waste type expected to be generated during decommissioning operations.
- Summarize the volumes of Classes A, B, C, and Greater-than-Class-C solid radioactive waste that will be generated by decommissioning operations.

- Specify on-site storage (prior to disposal and/or reclamation) requirements for each solid radioactive waste type expected to be generated during decommissioning operations.
- Describe treatment and packaging activities for stored wastes to conform to the waste acceptance criteria (WAC) for the intended disposal and/or reclamation facility.
- Describe transportation and disposal (T&D) requirements to conform to DOT requirements.
- Describe controls for volumetrically contaminated material (if required).
- Specify measures to prevent contaminated materials, or other loose solid radioactive materials, from being re-disbursed after excavation and collection.
- Specify the name and location of the intended disposal and/or reclamation facility for each solid radioactive waste type expected to be generated during decommissioning operations.

The purpose of the liquid waste management program is to ensure that controls on liquid waste stream generation, storage, treatment, disposal and/or reclamation will be protective of the public H&S and in accordance with NRC requirements. The applicable NRC requirements are 10 CFR Part 20 (Subpart K), 10 CFR 61.55, 61.56, 61.57, and 71.5.

The liquid waste management program will include the following:

- Specify the types of liquid radioactive waste that are expected to be generated during decommissioning operations.
- Specify the estimated volume, in liters, of each liquid radioactive waste type expected to be generated during decommissioning operations.
- Specify the radionuclides (including the estimated activity of each radionuclide) in each liquid radioactive waste type expected to be generated during decommissioning operations.
- Summarize the estimated volumes of Class A, B, C, and Greater-than-Class-C liquid radioactive waste that will be generated by decommissioning operations.
- Specify on-site storage (prior to treatment, disposal and/or reclamation) requirements for each liquid radioactive waste type expected to be generated during decommissioning operations.
- Describe treatment and packaging activities for liquid wastes to conform to the WAC for the intended treatment, disposal and/or reclamation facility.
- Describe the T&D requirements to conform to DOT requirements.
- Specify the name and location of the intended treatment, disposal and/or reclamation facility for each solid radioactive waste type expected to be generated during decommissioning operations.

In response to License Condition No. 52, FMRI will make available the RWMP and subsequent revisions and updates for review on-site by the NRC. FMRI will be responsible for generating the RWMP and the contractor will be responsible for program implementation. FMRI will update and have available at the site the RWMP prior to the beginning of each phase of decommissioning.

6.0 SITE RESTORATION

After Phase 1 operations are complete, the contractor will restore the site in accordance with direction from FMRI. The site restoration will include site grading to meet design site contours and the installation of permanent surface water and erosion and sedimentation controls. Designated disturbed areas will be prepared for seeding with the application of topsoil and the addition of soil conditioners as required. The designated areas will then be seeded and mulched to establish an appropriate vegetative stand to limit erosion and sedimentation. It is anticipated that the excavations will remain open, with proper controls, until final site characterization and site release is performed as part of Phase 3 of the decommissioning activities.

7.0 RADIATION SAFETY

7.1 Personnel Training and Monitoring

Training focused on the objectives of the WP will be required. Annual training and refresher training, as needed, will also be required (in order to comply with 10 CFR 19 and 10 CFR 20). A training program will be established by the selected contractor to meet project specifications and the following goals:

- Meet or exceed the applicable training requirements specified by NRC, Occupational Safety and Health Administration (OSHA), and the USEPA.
- Ensure that all personnel are knowledgeable of job requirements and are competent in the operation of the equipment they use, are safe in their work practices, and understand the risks associated with their work environment.
- Ensure that personnel meet the requirements of FMRI to work at the Muskogee site.
- Indoctrinate new employees to ensure that they understand all requirements they are expected to meet.

The program will include general radiation safety training/monitoring, site orientation, site- and job-specific training, and training verification and documentation.

At a minimum, all site personnel will be required to have appropriate basic radiation safety training and to wear radiation-monitoring devices. The radiation safety training that will be provided to each employee will include pre-employment, annual/periodic training, and specialized training to comply with 10 CFR 19.

Prior to entry into any Phase 1 operation area at the FMRI site, visitors will be given an orientation provided by FMRI personnel. Objectives of this orientation will be to familiarize personnel and visitors to:

- recognize labeled or posted radioactive materials and understand the meaning of radiological warning signs;
- understand that as long as radiological control procedures and limits are followed, harmful effects to personnel and the environment from radioactivity will be minimized;
- understand they are required to stay with host personnel at all times; and
- recognize and understand the meaning of, and proper response to, emergency signals.

Site and job-specific training will be required of all contractor personnel involved in day-to-day operations of the remediation project, project and management personnel who visit the site regularly, and other personnel identified by FMRI. Prior to being allowed unescorted access to the site, each person shall demonstrate a basic knowledge of radiation worker training, and/or shall be trained in accordance with facility requirements. Periodic worker jobsite or tailgate training will be provided to familiarize workers with job-specific procedures or safety requirements.

Personnel working on site will present evidence of general radiation safety training as required by 10 CFR 20 and pertinent refresher training (e.g., training certificates and letter of certification) prior to being permitted to perform work in a Phase 1 operation area. All site personnel shall sign a statement acknowledging that they have received site-specific training and that they understand the potential site hazards and the necessary control measures to reduce and/or eliminate those hazards. Training documentation, including the content of site-specific training and any other subsequent training (e.g., periodic safety meetings and specific task safety meetings), will be maintained by FMRI over the course and completion of all remediation activities. This information will be available for inspection by agencies with jurisdiction over site operations.

7.2 ALARA

The radiation safety philosophy of maintaining exposure to radiation and radioactive material as low as reasonably achievable (ALARA) for Phase 1 remediation (decommissioning) activities shall be as described in *FMRI Policy and Program Manual*, Division III, Section 5.0, *ALARA*. Requirements particular to implementation of Phase 1 are also included in facility procedures and instructions, and may be included in project instructions.

7.3 Environmental Monitoring Plan (EMP)

The Environmental Monitoring Plan for Phase 1 remediation (decommissioning) activities shall be as described in *FMRI Policy and Program Manual*, Division V, Section 1.0, *Environmental Monitoring*. Requirements particular to implementation of Phase 1 are also included in facility procedures and instructions, and may also be included in project instructions.

7.4 Quality Assurance Plan (QA Plan)

The Quality Assurance Plan for Phase 1 remediation (decommissioning) activities shall be as described in *FMRI Policy and Program Manual*, Division I, Section 3.0, *Quality Assurance*. Quality assurance and quality control requirements particular to implementation of Phase 1 will be included in project instructions.

7.5 [RESERVED]

7.6 Radiation Health and Safety Plan (RHSP)

The Radiation Health and Safety Plan for Phase 1 remediation (decommissioning) activities shall be as described in *FMRI Policy and Program Manual*, Division III, Section 4.0, *Radiation Safety*. Requirements particular to implementation of Phase 1 are also included in facility procedures and instructions, and may be included in project instructions.

8.0 CONTRACTOR INFORMATION

8.1 Contractor and Select Personnel Qualifications

The contractor selected for this project by FMRI will possess a demonstrated capability of remediation projects similar to Phase 1. The contractor should be fiscally solvent and possess the capability to obtain the required financial sureties required for a project of this type.

In the context of License Condition No. 50, the following should be considered the minimum qualification requirements for the select personnel listed below:

Health Physics Supervisor:

- An advanced degree or commensurate training as determined appropriate by FMRI;
- A minimum of 1 year of demonstrated field experience in applied health physics, industrial hygiene, or similar work relevant to radiological hazards associated with site remediation; and
- A thorough knowledge of the proper application and use of all health physics equipment used for the radiological present at the site, the chemical and analytical procedures used for radiological sampling and monitoring, and methodologies used to calculate personnel exposure to the radionuclides present at the site.

Construction Supervisor:

- An advanced degree or commensurate training as determined adequate by FMRI;
- A minimum of 1 year of demonstrated field experience supervising projects of similar size and scope to the project at hand; and
- A thorough knowledge of earthwork techniques, construction equipment, field operations, labor supervision, in addition to radiological and environmental health and safety activities.

Quality Assurance Officer and Quality Control Officer:

- An advanced degree or commensurate training as determined appropriate by FMRI;
- A minimum of 1 year of demonstrated field experience in applied health physics, industrial hygiene, or similar work relevant to radiological hazards associated with site remediation; and
- A thorough knowledge of the proper application and use of all health physics equipment used for the radiological present at the site, the chemical and analytical procedures used for radiological sampling and monitoring, and methodologies used to calculate personnel exposure to the radionuclides present at the site.

8.2 Contractor Responsibilities

The contractor's responsibilities will be as identified in the narrative of this Phase 1 WP. The contractor will be tasked to complete the project based on performance indicators for anticipated results rather than a design specifying the means.

9.0 SCHEDULE

A schedule for continuation of Phase 1 activities includes startup in July 2007. Subsequently, the schedule for Phase 1 activities will be negotiated between FMRI and the contractor.