Westinghouse

Hematite Former Fuel Cycle Facility Decommissioning

Evaluation for the Building Demolition

December 2004

1.0 Introduction

On October 5, 2004 Westinghouse submitted a license amendment request to the U.S. Nuclear Regulatory Commission for approval to deconstruct and demolish the buildings at the Hematite Facility. This evaluation was prepared to address additional issues and supplements the Environmental Report prepared for the building demolition.

2.0 Description of Work to be Completed

Westinghouse plans to demolish the buildings on the Hematite site. Each of the buildings is different and may require different demolition techniques based on size, composite material, or contamination levels. In accordance with the project management provisions of SNM-33, Westinghouse will prepare work plans or other applicable guidance documents that provide work instruction for dismantlement and demolition techniques. Evaluation will include review of concrete and other building material demolition utilizing techniques such as cutting, shearing, sawing and use of impact hammers. Prior to demolition, contamination will be removed and/or fixed as applicable.

Demolition is being requested for the following buildings:

Building	Description	Date Built
101	Tile Barn	Pre-1956
110	Pedestrian Entrance	1970
115	Generator/Fire Pump	1990
120	Wood Barn	Pre-1956
230	Offices/Former Rod Loading Plant	1992
231	Warehouse	1992
235	West Vault	1956
240	Recycle Recovery/Maintenance Shop/Lab/Green Room	1956
245	Well House	1956
252	South Vault	1963
253	Offices, Low Level Storage, Boiler Room, Cooling Water, Pump Room	1989
254	Pellet Plant	1989
255	Erbia Plant	1958
256	Pellet Drying 256-2 Workhouse	1986
260	Oxide and Oxide Loading Dock	1967
261	Limestone Building	1992

It is anticipated that demolition activities will produce 2 - 3 truck loads of waste a day of building debris. Hazardous waste will not be placed in storage and will be segregated to prevent co-mingling prior to packaging. Characterization of the waste will be performed to define proper waste disposal options. Clean debris that meets the surface release limits

of SNM-33 and does not have a concern of volumetric contamination will be sent to a permitted facility. This debris is included in the estimated 2 - 3 truck loads a day.

Permitting

The Hematite Facility is a registered large quantity hazardous waste generator with the State of Missouri and the Environmental Protection Agency (EPA). Currently, Hematite is disposing of hazardous waste in accordance with EPA and DOT regulations and this does not require a permit. No RCRA material will be involved in the demolition of the buildings and RCRA permitting will not be required.

If additional permits are necessary, these will be investigated and obtained after the amendment to SNM-33 allowing demolition of the buildings.

Environmental Monitoring

Air monitoring shall be performed during demolition activities. Perimeter monitors to measure airborne radiation levels shall be established as close to the demolition as possible and again at the boundary of the work area. Currently, three onsite remote air monitoring samples are collected continuously and analyzed weekly. During demolition activities, a minimum of three area air monitors will be utilized.

Noise monitoring shall be conducted during demolition. During building demolition, standard noise abatement measures will be implemented, as necessary, based on the type of work and noise levels. These noise abatement measures could include:

- Scheduling work to minimize the impacts;
- Locating stationary noise sources, such as generators, as far from sensitive uses as possible; and,
- Using the best available noise control techniques where possible.

Construction equipment noise ranges have been considered and will be assessed during demolition. Examples of construction equipment that may be used and their estimated noise levels are provided in the following table:

Equipment	Examples	Noise Level (dBA at 50 ft)
Materials Handling	Cranes and derricks	74 – 88
Stationary	Pumps, compressors, generators	69 – 87
Hauling	Trucks	83 – 94
Impact equipment	Pile drivers	95 – 106
Impact tools	Jackhammers, rock drills, pneumatic wrenches	81 - 98

EPA 1971

After receipt of the license amendment allowing building demolition and prior to demolition activities, air dispersion analysis for fugitive dust emissions will be investigated. The source for the emission will be defined and will be treated as a ground level release and will be related to site environmental conditions. Analysis will either be by hand calculation or through use of an industry standard computer code.

Radiation surveys of the building surfaces will be conducted to assess the levels of fixed and removable contamination. These surveys will be used to review deconstruction methods and fixatives that may be necessary during demolition. Based on these surveys and demolition activities, emission controls will be identified and implemented as necessary. The amount of water used during demolition to prevent fugitive emissions will be controlled to prevent water run-off and erosion problems. Surface water runoff will be controlled and monitored through the existing outfall system under National Pollutant Discharge Elimination System (NPDES) permit MO-0000761 issued by the Missouri Department of Natural Resources (MDNR). Soil erosion and sedimentation will be controlled in accordance with applicable state requirements and guidance.

3.0 Current Status

A request for amendment to SNM-33 was submitted to the U.S. Nuclear Regulatory Commission (NRC) on October 5, 2004. Prior to submittal of the amendment request, an evaluation of the options to provide a recommendation for removal action was prepared that evaluated the alternatives for the buildings. This evaluation fulfilled the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and National Contingency Plan (NCP) requirements for documentation of the removal action selection process. A newsletter was sent to the community and the local newspapers notified the public of the evaluation and the ability for the public to comment. A meeting is scheduled for January 6, 2005 with closure of the public comment period on January 18, 2005.

In addition to the NRC, Westinghouse has received approval from the National Park Service allowing demolition of the buildings. The State Historic Preservation Office has confirmed they have all the information they need and Westinghouse can proceed with demolition activities. They are finalizing the Historical American Engineering Record

(HAER) package but the finalized package is not a priority with them since they have already given approval to proceed.

4.0 Is this Work Scope within previous work performed under the License?

Past activities under SNM-33 did include construction and destruction of the process buildings as needed to facilitate process operations. However, SNM-33 was modified under Amendment 42 to prohibit building demolition under the current license. As such, a request to amend SNM-33 was submitted with an Environmental Report evaluating the proposed demolition to the NRC on October 5, 2004. Approval of this license amendment is required prior to performing demolition activities.

5.0 Will the work involve radiation exposures to workers that are higher than encountered during operations?

The planned building demolition will not result in radiation exposures to workers higher than those encountered during operations. Building contamination levels will be greatly reduced and radiation exposure will be minimal as building equipment and recoverable uranium will be removed prior to demolition activities. Only minimal uranium contamination is anticipated to be present on building surfaces. Based on the levels, this contamination can be removed or fixed to limit airborne contamination generated during demolition.

Characterization surveys will be performed as needed prior to demolition to support the Hematite ALARA program. The radiation exposure to workers, including both external and internal exposures is expected to be minimal and well within exposures received during normal plant operations. Routine radiological monitoring will be conducted during dismantlement and demolition activities to confirm this.

6.0 Will the work involve effluent releases that are higher than routine effluents during operations?

The planned dismantlement and demolition activities of the Hematite site buildings will not result in effluent releases higher than routine effluents during operations. There will be no liquid effluents released during this planned activity. Due to the anticipated low residual uranium contamination present on the surfaces of the building, fugitive air emissions of uranium are expected to be very low and will be well within the routine air effluents during operations. Air monitoring will be performed during activities to confirm effluent levels. In addition, the impact of a ground level release will be evaluated.

7.0 Does this work involve nuclear criticality safety considerations?

The planned demolition of the buildings does not involve nuclear criticality safety considerations. This work will not involve any accumulations of enriched uranium as all the equipment and ventilation systems and gross contamination will have been removed at the time of demolition. Therefore, consideration of nuclear criticality concerns has been designated as "not applicable" for building demolition activities.

8.0 Conclusions

Therefore, upon approval of the license amendment to allow building demolition, work can proceed because demolition activities:

- Involve techniques that have been used during other cleanup or maintenance operations;
- Do not require workers to enter areas where surface contamination and radiation levels are significantly higher than could been encountered during other licensed operations;
- Would not result in significantly greater airborne concentrations of radioactive materials than could be present during other licensed operations; and
- Would not result in significantly greater releases of radioactive material to the environment than those associated with other licensed operations.