

LICENSEE: Westinghouse Electric Company LLC – Festus, Missouri

SUBJECT: ENVIRONMENTAL ASSESSMENT RELATED TO CONSIDERATION OF WESTINGHOUSE ELECTRIC COMPANY, LLC.'S LICENSE AMENDMENT REQUEST TO DISMANTLE AND DEMOLISH THE HEMATITE FACILITY BUILDINGS, DOCKET NO. 70-36

The U.S. Nuclear Regulatory Commission (NRC) is considering amending Nuclear Materials License Number SNM-00033 issued to Westinghouse Electric Company, LLC, (WEC) to authorize the dismantlement and demolition of Buildings 101, 110, 115, 120, 230, 231, 235, 240, 245, 252, 253, 254, 255, 256, 260, and 261 down to building slabs and foundations at grade at the Westinghouse Electric Company, LLC (WEC) Hematite Facility in Festus, Missouri.

1.0 Introduction

In a letter dated October 5, 2004, WEC submitted a request to amend Materials License Number SNM-00033 to obtain authorization to dismantle and demolish Buildings 101, 110, 115, 120, 230, 231, 235, 240, 245, 252, 253, 254, 255, 256, 260, and 261 down to building slabs and foundations at grade. The licensee's October 5, 2004 license amendment request was noticed in the *Federal Register* on November 16, 2004 (69 FR 67187). This *Federal Register* notice also provided an opportunity for a hearing on this licensing action. This environmental assessment (EA) is being performed to evaluate the environmental impacts of WEC's request.

In accordance with the conditions currently described in Materials License Number SNM-00033, the licensee has been performing remediation of residual radioactivity and other industrial contaminants from internal building equipment and components for the building complexes. The radioactive contamination at WEC's Hematite, Missouri site consists of soils and building and equipment surfaces contaminated with uranium, fission products, and by-product material from licensed operations that occurred from the mid 1950's until 2001.

1.1 Proposed Action

The proposed action is to amend NRC Materials License Number SNM-00033 to allow the dismantlement and demolition of the buildings 101, 110, 115, 120, 230, 231, 235, 240, 245, 252, 253, 254, 255, 256, 260, and 261. The buildings will be demolished down to building slabs and foundations at grade and no work will be performed on sub-grade soil, the building slabs/foundations, or sub-grade structures and systems. WEC states in its application that the demolition of concrete buildings will be performed as determined by engineering evaluation. WEC plans to perform an engineering evaluation of the demolition of the concrete masonry unit (CMU) structures and concrete buildings, and use dismantlement and demolition techniques, such as cutting and shearing to demolish the buildings. Manual jack-hammers, equipment mounted jack-hammers (hoe ram), skid-steer loader or shears will be used to remove/dismantle and to size reduce concrete or CMU structures. The CMU walls may also be brought down using pushover techniques. Steel reinforcement bars will be torch-cut, sheared, or saw-cut as required for dismantlement, leveling, or size reduction purposes. The waste generated as a result of the demolition activities will be characterized by sampling and analysis to identify waste characteristics to ensure that it meets the Waste Acceptance Criteria of the approved disposal facility. Waste characterization data will also provide information to support health and safety operations during the demolition.

1.2 Purpose and Need for the Proposed Action

The NRC regulations require licensees to begin timely decommissioning of their sites, or any separate buildings, that contain residual radioactivity, upon cessation of licensed operations, in accordance with 10 CFR 70.38(d). The purpose of the proposed action is to reduce residual radioactivity at WEC's Hematite site. Additionally, although no definite future use plans have been developed for the site at this time, due to potential commercial value of the site property, the licensee plans to eventually return the land to beneficial unrestricted use. The proposed licensing action will support this goal. The NRC is fulfilling its responsibilities under the Atomic Energy Act and the National Environmental Policy Act to make a decision on a proposed license amendment for building dismantlement and demolition that ensures protection of the public health and safety and the environment.

2.0 Facility Description/Operating History

2.1 Site Local and Physical Description

The WEC Hematite site is located approximately 3/4 of a mile northeast of the unincorporated town of Hematite and approximately 35 miles south of the City of St. Louis, Missouri. The site is primarily surrounded by suburban and residential communities in Jefferson County, Missouri. Jefferson County is predominantly rural and characterized by rolling hills with many sizeable woodland tracts. The land area is classified as 51% forest, 33% agricultural, and approximately 16% urban, suburban, commercial, and unused or undeveloped. The primary land use within a five-mile radius of the facility consists of deciduous forest, pasture and residential. Residential land use is centered on the communities of Festus/Crystal City to the northeast, Horraine to the north, and Hillsboro to the northwest. Other land uses include row crop and urban/residential. Land use classifications are based on the National Land Cover Dataset. The plant facilities portion of the site is located on a central site tract of approximately 10-acres. The property is approximately 220 acres. Much of the northern portion of the property is wooded. Surface water bodies on site include the East Lake, located on the eastern end of the property, the Site Pond, located west of the site buildings, Joachim Creek along the southern site boundary, Northeast Site Creek and Site Creek. The Hematite facility is located on the north, northeast flank of the Precambrian age St. Francis Mountains uplift, which created the Ozark Dome. A full description of the site and its characteristics is provided in the WEC Environmental Report for Building Demolition at the Hematite Facility which was submitted in conjunction with the license amendment request for dismantlement and demolition of the buildings. The nearby community of Hematite has expressed interest in future development of the site. However, as of June 2004, no definite future use plans have been developed for the site.

2.2 Facility Operating History

From the mid 950's until 2001, the WEC Hematite site was involved in production and manufacturing of nuclear fuel. Building 101 (Tile Barn) housed former Emergency Operations Center during plant operations and was later used for storage of both clean and contaminated equipment. Building 110 houses the security and some administrative office spaces. Building 115 housed the plant diesel emergency generator and fire pumps. Building 120 (Wood Barn) was used for both clean and contaminated equipment. Building 230 was used for the fuel assembly operations. The building surfaces have no known levels of contamination above the level for unrestricted use. Building 230 currently houses administrative offices. Building

231 was used as a warehouse to store shipping containers. Building 235 was used as a vault to store depleted, natural, and enriched uranium. Building 240 contained laboratory and maintenance area, a recycle recovery area, and a waste incinerator. Past operations in this building also included the conversion of high enriched uranium using a wet conversion process and recovery. A portion of the building was used for recycle and recovery operations and high-enriched material operations. Another portion of the building was formerly used for the incinerator and housed low-enriched powder operations, including ammonium diuranate and oxidation/reduction furnaces. Building 254 (Well House) is used for polishing potable water by chlorination. Building 252 (South Vault) is a reinforced concrete structure with six bays used for storage of low-enriched uranium. Building 253 contains offices, various site utilities, a uranium storage facility, processing areas and decontamination facilities. Contained within Building 253 is Building 250, which was formerly a stand-alone structure. Building 250 became room 250-1, and in 1958 rooms 250-2 and 250-3 were added to Building 250. Building 250 was used for storage of fuel feed stock. Nuclear fuel was manufactured in Buildings 254 (Pellet Plant) and 255 (Eriba Plant). Buildings 256-1 (Pellet Drying) was initially used for warehouse space and later was used for pellet drying. Building 256-2 (Workhouse) was used as the main warehouse for shipping pellets and receiving supply. Building 260 was used for conversion process. Building 261 was used for storage of unused limestone and contained a preheat furnace. The majority of the buildings were constructed during 1956 through 1974 with final construction in 1989. There are currently no fuel manufacturing activities at the site.

3.0 Alternatives to the Proposed Action

The alternatives to the proposed action of dismantlement and demolition of the buildings are (1) to decontaminate the buildings without dismantlement and demolition or (2) to take no further action. The no-action alternative is not acceptable because it will result in a violation of the 10 CFR 70.38d, which requires licensees to decommission their facilities when licensed activities cease, and to request termination of their radioactive materials license. The no-action alternative would keep radioactive material on site without disposal. Additionally, the impact of the proposed action encompasses the alternative action of decontaminating and maintaining the buildings on site. Maintaining the buildings on site would provide negligible, if any, environmental benefit, but would greatly reduce options for future unrestricted use of the site. Therefore, these alternative are not considered to be reasonable and are not analyzed further in the EA.

4.0 Environmental Impacts

The NRC staff has reviewed the license amendment request for the WEC facility in Hematite and examined the impacts of this license amendment request. Potential impacts include water resource impact (e.g., water may be used for dust control), air quality impacts from dust emissions, temporary local traffic impacts resulting from transporting the building debris offsite, beneficial local economic effects due to the creation of jobs to perform dismantlement and demolition, human health impacts, noise impacts from equipment operation, scenic quality impacts, and waste management impacts. There may be minor impacts to surface water resources at the Hematite facility as a result of water runoff that could occur during the building demolition process. The runoff, whether as a result of natural precipitation or from water used to control fugitive dust emission, will be managed by WEC Hematite erosion and sediment control management plan. Any discharge will be in compliance with Material License Number SMN-00033 and the WEC Hematite National Pollutant Discharge Elimination System permit

issued and managed by the State of Missouri. There will be no surface or subsurface soil disturbances as the buildings will be removed down to the grade and concrete slab level. There are no flood plains or wetlands present within the central site tract where the building demolition will take place. The central site tract soil consists primary of impermeable soil. WEC has committed to using the best practices to manage all potential impacts during building demolition. Overall, it is anticipated that there will be no significant impact on surface and groundwater.

Based on its review, the staff has determined that no surface water or ground water impacts are expected from building dismantlement and demolition down to the building slabs and foundations at grade. Additionally, the staff has determined that significant air quality, noise, land use, and off-site radiation exposure impacts are also not expected. No significant air quality impacts are anticipated because of the contamination controls and dust suppression techniques that will be implemented by WEC during building dismantlement and demolition. WEC license amendment request describes the work to be performed and its strategy for controlling radiation fugitive emissions and discharge. WEC has committed to have procedures to perform building demolition that will provide guidance for controlling emissions and runoff. Additionally, WEC has committed to evaluate its existing building characterization data and further pre-demolition characterization data prior to demolition to verify radiological conditions and controls which WEC has committed to incorporate in implementing building demolition procedures, as noted above.

Staff evaluated the temporary local traffic impacts resulting from transporting the building debris offsite due to the licensee's proposed request. WEC ceased fuel production operations at the Hematite Facility and has no future plans of operating the site as a nuclear fuel processing facility. The only potential waste streams from the facility will result from the demolition process. Based on characterization data, WEC proposes to segregate and analyze the waste as required by the disposal facility site's waste acceptance criteria. WEC proposes that clean debris will be characterized and will meet radiological free release criteria for radiological and hazardous contamination. WEC also states that clean debris will be containerized, transported and disposal of it at permitted facility. This indicates that WEC does not plan on leaving any building demolition debris or associated waste at the site. The risk to human health from the transportation of all radioactive material in the U.S. was evaluated in NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes." The principal radiological environmental impact during normal transportation is minimal direct radiation exposure to transport worker and nearby persons from radioactive material in the package. The average annual individual dose from all radioactive material transportation in the U.S. was calculated to be approximately 0.5 mrem, well below the 10 CFR 20.1301 limit of 100 mrem for a member of the public. WEC estimates that 2 to 3 truck loads of demolition waste will leave the site per working day compared to an average daily traffic flow of approximately 2,570 vehicles per day (2002 data) on State Route P. The trucks will then travel on State Route A, a two-lane rural/suburban highway which connects to State Route P approximately 2 miles east of the site. State Route A enters the western edge of Festus, Missouri. Interstate 55, a major north-south freeway, is located approximately 3.5 miles east of the site and intersects with State Route A in Festus, Missouri. This four-lane interstate freeway connects to Interstate Highways 270, 44, and 70 in the St. Louis, Missouri area, approximately 35 miles north of the site. The annual average daily traffic count for I-55 near Festus was 35,347 vehicles per day (2002 data). There are no public transit systems, such as bus or light rail available in the immediate vicinity of the site. The trucks once entering the above Interstate Highways will then travel to their intended

destinations, i.e., Envirocare of Utah, permitted disposal facility in Tennessee, sanitary landfill, etc.

Furthermore, regulations designed to ensure adequate containment of transported materials discussed 10 CFR 71, apply to this proposed action. Thus, waste management and transportation impacts from the building dismantlement and demolition are not expected to be significant.

Occupational health was also considered in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977). The Department of Transportation regulations in 49 CFR 177.842(g) require that the radiation dose may not exceed 0.02 mSv (2 mrem) per hour in any position normally occupied by an individual in a motor vehicle. Shipment of these materials would not affect the assessment of environmental impacts or the conclusions in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (NRC, 1977).

Staff has determined that Implementation of the proposed action would directly impact the potentially historical resources at the Hematite facility. The plan to remove these buildings would result in the permanent loss of these buildings from the historical record. Due to the potential historical significance and the proposed impacts to these buildings, the U.S. National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), and State Historic Preservation Office (SHPO) were consulted. The NPS and SHPO required a Historic American Engineering Record (HAER) be compiled for each of the buildings on site (HAER file No. MO-311), as a result of a draft Memorandum of Agreement (MOA) between WEC and SHPO. The SHPO's initial opinion was that the proposed demolitions will have an adverse effect on the National Register of Historic Places eligible district. The NPS advised WEC that it may proceed with demolition in accordance with stipulations outlined in the MOA with the Missouri SHPO. NPS further advised WEC that a letter of final approval for this large HAER project will be provided upon receipt of the complete, revised documentation. SHPO in a letter dated January 4, 2005 to NRC states: " While all parties involved in the project have followed the stipulations in the draft MOA in good faith, please be aware that an executed MOA is necessary to complete the Section 106 process. In order for the project to move forward, it is acceptable to our office that Westinghouse and NRC proceed with the project, in accordance with the draft MOA. " The FWS has provided that its evaluation and search of existing information indicates no federally listed, proposed, or candidate species or critical habitat occurs on or near the project site. See Section 7.0 of this EA.

4.1 Cumulative Impacts

The NRC has evaluated whether cumulative environmental impacts could result from an incremental impact of the proposed action when added to other past, present, or reasonably foreseeable future actions in the area. The proposed NRC approval of the License Amendment, when combined with known effects on resource areas at the site, including future further site remediation are not anticipated to result in any cumulative impacts at the site.

5.0 Mitigation Measures

The license amendment request submitted by WEC contains mitigation measures to further ensure that the requested licensing action will not have any adverse environmental impact.

WEC plans to implement procedural controls, such as the use of less aggressive dismantlement and demolition techniques, including cutting and shearing, to minimize the generation of fugitive emissions. Other engineering controls, including water sprays, will also be utilized to control fugitive emissions and visible dust, if needed. In addition, WEC has agreed to perform the mitigative measures that have been proposed by the Missouri SHPO regarding the historical impact of the proposed action.

Erosion and sediment control will be provided, as necessary, in accordance with best management practices, regulatory guidance, and good engineering practices. This will include structural features, stabilization, and storm water management. The controls may be temporary or permanent.

6.0 Monitoring

The license amendment request submitted by WEC described the effluent/environmental monitoring that will take place during building dismantlement and demolition. This description included not only the routine effluent/environmental monitoring program that WEC presently has in place, but also that air monitoring shall be performed during the demolition activities.

Work activities are not anticipated to result in radiation exposures to individual members of the public in excess of ten percent of the 10 CFR 20.1301 limits. However, WEC's environmental monitoring program must implement the requirements of Materials License Number SNM-00033, Chapter 3, Radiation Protection, and Chapter 5 Environmental Protection. WEC has acknowledged that building demolition activities will necessarily require that building stack monitoring be terminated and has committed to shift radiation protection of the public and the environment compliance demonstration to air monitoring devices located around the site to assure that all pathways for release of radioactive material are monitored. Additionally, WEC has committed to expand its current liquid effluent monitoring program to incorporate additional potential discharge points as identified by Westinghouse and the Missouri Department of Natural Resources during consideration of the renewal of the National Pollutant Discharge Elimination System discharge permit. Moreover, WEC has committed to modify and supplement approved environmental monitoring plans, policies, and procedures that support the license, before and during the proposed work, as necessary, to support building dismantlement and demolition.

Perimeter monitors to measure air borne radiation levels shall be established as close to the demolition activities as possible and again at the boundary of the work area. Currently, three onsite remote air monitoring samples are collected continuously and the results are analyzed weekly. During the demolition activities, the licensee has committed to use a minimum of three area monitors. The locations for the air samplers will be chosen with considerations of meteorological conditions relative to the dismantlement and demolition activities to ensure that maximum airborne concentrations are collected. The air sampling data will be used by WEC to demonstrate that any effluent from the proposed building dismantlement and demolition will be limited in accordance with NRC requirements in accordance with 10 CFR Part 20.

7.0 Agencies and Individuals Consulted

The NRC staff has prepared this EA with input from the Missouri SHPO, by letter dated November 4, 2004, and the FWS, by letter dated November 9, 2004. In its letter of January 4, 2005, Missouri SHPO noted that "In order for the project to move forward, it is acceptable to our office that Westinghouse and NRC proceed with the project, in accordance with the draft MOA."

In its letter of December 10, 2004, the FWS indicated that “our evaluation and search of existing information indicates no federally listed, proposed, or candidate species or critical habitat occurs on or near the project site. This fulfills your consultation requirements under Section 7 of the Endangered Species Act of 1973, as amended”. The staff provided a draft of this Environmental Assessment to the State of Missouri for review. In its letter dated April 20, 2005, which commented on draft EA, the State of Missouri responded by stating it agreed with the proposed alternative, but made no other comments about the draft EA. However, this letter from the State of Missouri also mentions the State’s January 2005 letter to WEC. The State’s letter to WEC identified concerns related to monitoring and mitigation. Coincidentally, at this same time, the NRC realized that the application was not reviewed by a Health Physicist. NRC then conducted a complete technical review of the application. Through the NRC’s request for additional information process, NRC asked for additional information regarding the licensee’s plans to characterize the buildings before building dismantlement and demolition and its methods proposed to control and monitor water discharges and fugitive emissions so that the staff could adequately evaluate their impacts on the environment.

8.0 Conclusion

Approval of the license amendment will not cause significant impacts on the health and safety of the public or on the environment due to mitigation measures that WEC is committing to use. The NRC staff has concluded that exposures to workers will be low and well within the limits specified in 10 CFR 20. Dismantlement and demolition of the buildings, as proposed by the amendment, will result in an overall reduction of radioactive material at the WEC Hematite which will reduce the long term potential for release of radiological contamination to the environment. No significant radiologically contaminated effluents are expected during building dismantlement and demolition. No radiation exposure to any member of the public is expected.

9.0 Finding of No Significant Impact

On the basis of this EA, NRC has concluded that there are no significant environmental impacts from the proposed amendment and has determined not to prepare an environmental impact statement.

9.0 List of Preparers

This Environmental Assessment was prepared entirely by the following NRC staff.

Amir Kouhestani and Amy Snyder, Project Managers, Decommissioning Directorate, Division of Waste Management and Environmental Protection, Office of Nuclear Material Safety and Safeguards (NMSS), Decommissioning Issues.

Alicia Mullins, Phyllis Sobel, and Susanne Woods, Environmental Project Managers, Division of Waste Management and Environmental Protection, NMSS, Environmental Issues.

Maria Schwartz and Brooke Smith, Legal Counsels, Office of General Counsel, Legal Issues.

10.0 List of References

The licensee's October 5, 2004, license amendment request was noticed in the *Federal Register* on November 16, 2004 (69 FR 67187). This *Federal Register* notice also provided an opportunity for a hearing on this licensing action.

The application for the license amendment and supporting documentation are available for review at the U.S. Nuclear Regulatory Commission's Public Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. (See ADAMS Accession No. ML051310063 and ML050250347 and ML052140426).

NUREG-0170, 1977. Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes, U.S. Nuclear Regulatory Commission, Washington, D.C.

NUREG-0586, 1988. Final Generic Environmental Impact Statement on the Decommissioning of Nuclear Facilities, U.S. Nuclear Regulatory Commission, Washington, D.C.

NUREG-1496, 1977. Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities Nuclear Regulatory Commission, Washington, D.C., July.

NUREG-1748, 2003. Environmental Review Guidance for Licensing Actions Associated with NMSS Programs Nuclear Regulatory Commission, Washington, D.C., August.

REGULATORY GUIDE-1.86, 1974. Termination of Operating Licenses for Nuclear Reactors, Nuclear Regulatory Commission, Washington, D.C., June.

WEC, January 4, 2005. "Demolition Permit Application for demolition of the Buildings", Jefferson County Building Commission, Hillsboro, Missouri.

Asbestos Abatement Registration Form for WEC filed with the Missouri Department of Public Health.

State of Missouri Department of Natural Resources, letter to Daniel Gillen from Doyle Childers, dated April 20, 2005.

State of Missouri Department of Natural Resources, letter to Amir Kouhestani from Mark A. Miles, dated January 4, 2005

United States Department of the Interior, Fish and Wildlife Services, letter to Amir Kouhestani from Charles M. Scott, dated December 10, 2004.