U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Report No.	070-00026/96-001
Docket No.	070-00026 040-03558
License No.	SNM-37 (Terminated) SUC-509 (Terminated)
Licensee:	Westinghouse Electric Corporation P.O. Box 355 Pittsburgh, Pennsylvania 15230
Inspection At:	Specialty Metals Plant RD4, Box 333 Blairsville, Pennsylvania 15717
Inspection Conducted:	December 4 and 6, 1996

Inspectors: Mark C. Roberts 1-27-97
Mark C. Roberts, CHP — date
Senior Health Physicist

A. Dimitriadis 1/27/97
Anthony Dimitriadis — date
Health Physicist

Approved By: Ronald R. Bellamy January 28, 1997
Ronald R. Bellamy, Ph. D., Chief — date
Decommissioning and Laboratory Branch
Division of Nuclear Materials Safety

Inspection Summary: Announced safety inspection of exterior and interior remediation activities, conducted December 4 and 6, 1996 (Inspection Report No. 070-00026/96-001)

Areas Inspected: Project Management and Staffing; Characterization and Remediation of Exterior Areas; Remediation of Interior Areas; Radiation Protection Procedures; Waste Disposal and Storage.

Results: No violations were identified.

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DETAILS

1. Persons Contacted

* Joseph Nardi, Supervising Engineer,Westinghouse Electric Corporation (Westinghouse)
Jeffrey Burta, Hydrologist, Westinghouse
* J. Wayne George, Manager Environmental Affairs, Westinghouse
* James Flanigan, Safety Engineer, Westinghouse
Philip Horrell, President and Business Manager, IBEW Union Local 1096, Westinghouse (also via telephone on January 24, 1997)
* Larry Smith, Health Physics Supervisor, Numanco
Todd Brautigam, Health Physics Technician
Darryl Klink, Landfill Operator, Resource Conservation Corporation (via telephone on January 24, 1997)
Various contractors' employees

* Denotes those present at exit interview

2. Background

The Westinghouse Specialty Metals Plant in Blairsville, Pennsylvania (formerly tne Blairsville Metals Plant) was licensed by the AEC under License Nos. SNM-37 and SUC-509 to conduct research and development using low-enriched and depleted uranium. These licenses expired on July 1, 1961 and December 31, 1964, respectively. An AEC confirmatory survey performed on October 18, 1961 did not identify any "significant" contamination at the facility. Remaining licensed material was transferred to licensed Westinghouse facilities or disposed of as radioactive waste. The Blairsville facility currently is involved in manufacturing operations; however, radioactive materials are no longer being used.

As part of a NRC program to ensure that AEC and NRC licenses that have been terminated meet the NRC's current criteria for release for unrestricted use, the NRC's contractor, Oak Ridge National Laboratory (ORNL), identified License Nos. SNM-37 and SUC-509 as files describing a site that required additional review. Region I staff reviewed the files and determined that further information on this site was necessary to conclude that the buildings and property meet the current criteria for release for unrestricted use.

Westinghouse personnel performed radiological measurements in interior areas of the facility where operations with licensed material were conducted, and identified non-removable surface contamination at levels exceeding current NRC guidelines for release for unrestricted use. Uranium contamination was also identified in two sumps and a number of drain lines beneath the concrete floor. Measurements outside the facility indicated soil contamination exceeding the criteria for release for unrestricted use and also indicated other areas that need more extensive radiological measurements to adequately characterize contamination levels. The exterior areas include the site of a former waste processing building,

approximately 200 meters south of the Main Building, and a construction material dump east of the Main Building. The area south of the Main Building will be evaluated later in 1997.

Since December 1994, Westinghouse has been performing major interior remediation during planned shutdowns of the facility. Remediation in other areas of the plant have been ongoing since the middle of 1995. The last major interior contaminated area, a manufacturing area in the front (east side) of the Main Building, is currently under remediation. Characterization and removal of contaminated soil is in progress in the dump area.

3. Project Management and Staffing

The characterization and remediation of the interior and exterior areas is coordinated by a Westinghouse engineer and his staff. This individual and the members of his staff have extensive remediation experience and are familiar with the site. Radiation survey activities are conducted by a Westinghouse health physics technician and contractor health physics technicians. These individuals perform both routine radiological surveys to assess remediation progress and also perform final radiological surveys once remediation has been completed in an area. Remediation work is performed by a contractor staff with extensive experience in this and other Westinghouse remediation projects. Turnover of both contractor staffs has been very low.

The remediation contractors receive training in radiation safety initially and refresher training annually. The inspector reviewed the training outline distributed to workers. Based on a review of the exterior project daily logbook, the inspector confirmed that training had been presented to the remediation contractors on September 24 and November 11, 1996. Training records in the health physics office indicate training was also performed on December 24, 1995. Union workers from the Westinghouse Blairsville facility are not directly involved in remediation activities. These individuals are not trained in radiation safety, but are briefed on the radiological nature of the work being performed by the contractors. Union craftsmen are only involved in refinishing or repairing areas once the contamination has been removed and final surveys indicate that the areas meet the criteria for release for unrestricted use. The tasks performed by the union staff typically include pipe replacement, masonry and other technically skilled crafts. Newly hired workers may be admitted to the union after successfully completing a two-week orientation period and a 90-day probationary period.

No safety concerns were identified.

4. Characterization and Remediation of Exterior Areas

Radiological contamination was identified in the fill material of a dump area, east of the main building. The waste in the dump consists of soil, concrete chunks, incineration wastes and other miscellaneous debris spread over an area of

approximately 1000 m^2. Three discrete areas of contamination have been identified within the dump. To facilitate screening and segregating the waste, an asphalt slab was built adjacent to the dump area. Suspect material is dumped onto the slab and then moved in smaller loads into a covered, temporary structure. Debris is removed and the soil is loaded into a cement mixer where it is mixed to obtain a uniform concentration. After mixing, the material is dumped into a trough and two representative samples are obtained. The material is then loaded into either 7.5 ft^3 drums or 30 ft^3 reinforced bags for storage. The process is repeated until the drum or bag is full. The soil from each trough sample is composited to make two larger samples. One sample is gross gamma counted on site to make an estimate of the uranium concentration. The second sample is forwarded to the laboratory in the Westinghouse Waltz Mill facility for gamma spectrometry analysis. Once a container has been filled, it is closed and weighed. A health physics technician then makes radiation and removable contamination readings on each container. The highest measured exposure rate has been 0.4 mR/hour. The debris removed earlier is surveyed for surface contamination. Measurements as of the date of this inspection have not identified any surface contamination on any of the debris.

The contamination identified in the dump area has been primarily enriched uranium. Elevated concentrations (above natural background) of thorium-232 and thorium-228 have been identified in selected samples, as well as trace amounts of cobalt-60 and cesium-137. The presence of contaminants other than uranium indicates that waste from other Westinghouse facilities may have been disposed in this area. The highest concentrations of uranium have been found on isolated samples, which indicates that pockets of contamination exist rather than widespread contamination of the dump area. Chemical analysis performed on samples have not indicated any hazardous or mixed waste.

In August and September 1996, an asphalt pad adjacent to the south end of the Main Building was removed and replaced with concrete. Although this area did not have a history of radioactive material use nor was the area suspected of being contaminated, health physics technicians collected soil samples for radiological analysis. The analyses did not reveal any contamination in this area. The asphalt was disposed as non-radioactive waste. Discussions between the inspector and various individuals did not identify any other known disposals since the beginning of the remediation projects in December 1994.

No safety concerns were identified.

5. Remediation of Interior Areas

Interior remediation at the Blairsville facility has included removal of two sump pits, removal of contaminated piping connected to the sumps, removal of contamination in concrete joints and floor anchor bolts, and scabbling surface contamination on concrete. The last major interior remediation project to be completed is the removal of a 100-foot section of a contaminated waste line that

was located under production equipment in the eastern portion of the main building. This equipment was scheduled for replacement in mid-1996. Westinghouse initiated removal of the contaminated pipe after the equipment and sections of the concrete floor were removed. Enriched uranium sludge was found in the pipe that was removed. Two adjacent sections of the pipe still must be evaluated. The concrete floor above the pipe was surveyed and found to be free of contamination. Soil above the pipe was also found to be clean. The concrete chunks and clean soil were disposed in a local landfill. One large container of waste soil (approximately 15 m^3) was in temporary storage until the analytical results on the soil measurements were complete. Since most of the piping was terra cotta, a potentially porous material, soil beneath the pipe was removed and separately stored. Analytical results had not been completed on samples of this soil nor soil samples from the excavated pipe trench. Contaminated soil and debris and the material awaiting the results from radiological analysis are stored in the Westro Building, a large building west of the Main Building.

No safety concerns were identified.

6. Radiation Protection Procedures

Work in radiologically controlled areas is conducted under a Radiation Work Permit (RWP) program. Each RWP describes an authorized work activity and includes a description of the radiological conditions, specifications for required personal protective equipment and radiological survey requirements. Each individual is required to read and sign the RWP prior to entering the work area. RWP B96-002, issued September 26, 1996, was in use for the exterior remediation activities and appeared to adequately address radiological protection considerations for the job.

During the initial phase of the exterior project when higher concentration material was being handled, general area air sampling was performed daily inside the temporary structure. The inspector examined selected air sampling results for the period September 27, 1996 through November 19, 1996. Measured air concentrations ranged from 8.5 E-14 to 1.8 E-12 μCi/cc, which are much less than the uranium-235 Derived Air Concentration (DAC) of 2 E-11. The air sampling frequency was cut back to one to two times per week since the measured concentrations were approximately twenty times less than the DAC.

Personnel radiation exposures are measured using Landauer thermoluminescent dosimeter (TLD) badges that are exchanged monthly. All monthly exposures are typically less than 50 millirem. The TLD results are reviewed by one of the Westinghouse health physicists or by one of the health physics technicians.

The remediation activities at the Blairsville facility are being conducted in accordance with a health and safety plan dated December 23, 1994. This plan has been reviewed by the NRC. The exterior remediation activities are also being performed using the guidance in this health and safety plan and an addendum that

discusses the unique aspects of the exterior work. The inspector requested that the exterior work addendum to be sent to the NRC for review.

No safety concerns were identified.

7. Waste Disposal and Storage

Waste from the remediation projects is stored in the Westro Building, a large building west of the Main Building. Waste soil and debris from these remediation projects falls into four general categories; hazardous waste (the concentrations of chemical contaminants exceed EPA or Pennsylvania limits for unrestricted release); radiological waste (the total uranium concentration exceeds 30 pCi/g); mixed waste (the total uranium concentration exceeds 30 pCi/g and there is hazardous waste present above EPA or Pennsylvania limits; and non-radiological, non-hazardous waste (total uranium concentration is less than 30 pCi/g and hazardous material concentration guidelines are not exceeded). Approximately 750 drums and bags of waste (mostly soil) were generated from the remediation projects. Each drum or bag of remediation waste stored in the building is assigned a unique, sequential container number. The records for each container include information on the date collected, a description of the contents, a description of the area where the material was excavated or removed, container weights, and radiation exposure rates from the containers. Samples were collected from each container (or a sample was composited from a group of containers from the same source) and submitted for analysis. Radiological analyses are performed in the laboratory at the Westinghouse Waltz Mill facility.

In the summer of 1996, the containers of material that contained the non-radiological and non-hazardous waste were consolidated into large roll-off containers. Approximately 630 drums of material were loaded into eighteen of the roll-off containers. The loading and selection of drums was coordinated by two health physics technicians. The technicians maintained a record of the containers selected for disposal by this method.

Roll-off containers were disposed at the Resource Conservation Corporation landfill in Cairnbrook, Pennsylvania. This facility is permitted by the Commonwealth of Pennsylvania. Included in the wastes the facility is authorized to accept are soils and debris contaminated with low concentrations of PCBs. Waste from the Blairsville facility was shipped to the landfill during the period July 16 - 31, 1996. All loads to be dumped into the landfill pass through a radiation detector system to monitor each load for radioactive materials. The radiation detector system is located on the incoming truck scale so that the load is analyzed for radioactivity during the weighing process. None of the Westinghouse loads was rejected.

No safety concerns were identified.

8. Exit Interview

The results of the inspection were discussed with the individuals identified in Section 1.