

The quarterly status reports for those Region II sites contained on the ORNL list of formerly licensed sites identified as potentially contaminated are contained in Attachments I through 4. The status reports for those sites with an ORNL final score greater than 300 which remain open are at Attachment I and those with a score from 5 to 300 are at Attachment 2. The status reports for those sites with an ORNL final score greater than 300 which Region II recommends be closed are at Attachment 3 and those with a score from 5 to 300 are at Attachment 4. The information required for the Monthly Information Status Report is at Attachment 5. A tabular summary of all files assigned to Region II is at Attachment 6.

A detailed description of the actions Region II **has taken** to evaluate the status of the two sites associated with the former American Lava Corporation (License No. SNM-00109, ORNL Score 6,140 and License No. C-03469, ORNL Score 33) is at Attachment 7. Region II recommends that the terminated sites status for both these sites be changed from "open" to "closed." We ask that you review these documents as soon as possible so that we may notify the current site owners/occupants of the results of our evaluations and recommendations.

If you have any questions regarding these reports or our evaluations, please contact Mr. Jay L. Henson of my staff at (404) 331-0344.

- Attachments:
- (1) Reports for sites >300 (remain open)
  - (2) Reports for sites <300 (remain open)
  - (3) Reports for sites >300 (recommend deletion)
  - (4) Reports for sites <300 (recommend deletion)
  - (5) Monthly Information Status Report
  - (6) Tabular summary for all Region II sites
  - (7) American Lava Evaluations

*DL 11/06/95*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W., SUITE 2900  
ATLANTA, GEORGIA 30323-0199

November 6, 1995

*Various licenses*

MEMORANDUM TO:

Donald A. Cool, Director  
Division of Industrial and Medical  
Nuclear Safety  
Office of Nuclear Material Safety  
and Safeguards

FROM:

Bruce S. Mallett, Director *Bruce Mallett*  
Division of Nuclear Materials Safety

SUBJECT:

STATUS REPORT OF REGION II REVIEW OF OAK RIDGE  
NATIONAL LABORATORY (ORNL) LIST OF POTENTIALLY  
CONTAMINATED SITES

STATUS REPORTS FOR SITES WITH ORNL SCORE >300

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Docket No. 070-00784

License No. SNM-00724

Licensee Name: Union Carbide Corporation

Site Name: Carbon Products Division

Site Address: 3 miles south of Lawrenceburg, TN

City: Lawrenceburg State: TN Zip: 38464

Regional Contact: Jay L. Henson Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 15,456

Background

- \* On August 26, 1963, Union Carbide-Lawrenceburg was issued an SNM license authorizing possession of up to 500 grams of fully-enriched (<94%) uranium for testing of equipment and processes in their Lawrenceburg Fuel Development Facility.
- \* On May 22, 1964, the license was amended to authorize possession of 150 kilograms of U235 to make graphite-coated uranium-thorium carbide particles and graphite-matrix fuel elements.
- \* The possession limit was increased to 475 kg. on June 12, 1964.
- \* On December 6, 1964, a capsule containing 93% enriched uranium exploded in a furnace used to convert uranium oxide to uranium dicarbide. One additional capsule ruptured after being ejected from the furnace by the explosion. The two ruptured capsules contained 10.9 kg. of uranium. The licensee's description of the cleanup and associated sampling/monitoring performed after the incident does not clearly state the quantity of material that was recovered from the ruptured capsules. Soil samples were taken outside the fence around the facility, but there is no indication that soil samples were taken within the restricted area.
- \* Liquid wastes containing "small amounts" (undefined) of non-recoverable licensed material were piped to two settling basins after being fluorometrically measured. Daily samples were also taken of liquid exiting the basin prior to entering Shoal Creek.



## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

Union Carbide Corporation  
Lawrenceburg, TN

License No. SNM-724  
Docket No. 070-00784

By letter dated February 4, 1974, the licensee submitted closeout survey information and requested that License No. SNM-724 be terminated and the facility be released for unrestricted use. (NOTE: The submitted survey does not to include soil or settling basin sampling.)

In a March 15, 1974 memo, the Chief, Fuel Fabrication and Reprocessing Branch, AEC, stated that the submitted survey appeared to meet AEC guidelines for decontamination of facilities prior to release for unrestricted use, but desired that Region II perform a confirmatory survey.

On April 5, 1974, Region II performed a closeout inspection which was documented in Inspection Report 70-784/74-1. Region II recommended that the license be terminated and the facility released for unrestricted use. (NOTE: The report does not include soil or settling basin sampling.)

By AEC letter dated June 4, 1974, License No. SNM-724 was terminated and the facility released for unrestricted use.

#### Assessment

Region II evaluated the available survey data to determine if the information is sufficient to conclude that the building meets existing guidelines for unrestricted use. Region II determined that sampling of the soil in the former restricted area as well as the settling basins should be performed.

Union Carbide (UCAR) submitted a survey/sampling plan in 11/11/94. Region II reviewed the plan and sent comments back to UCAR on 1/12/95. UCAR expects to submit a revised sample plan in 4/95.

UCAR submitted their revised sampling plan in a letter dated April 20, 1995. Region II personnel reviewed the plan and prepared a response which included comments regarding some changes which must be made to the plan before it could be approved. The Region II letter to UCAR was forwarded to the State of Tennessee for their review and comment on May 31, 1995. Their comments were forwarded to Region II on June 18, 1995, and are under review. Region II will send a letter to UCAR with comments regarding the revised sampling plan in July, 1995.

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Union Carbide Corporation  
Lawrenceburg, TN

License No. SNM-724  
Docket No. 070-00784

Assessment

Region II's comments to the UCAR sampling plan were forwarded to UCAR in a letter dated August 3, 1995. UCAR's response to Region II's comments was received on October 26, 1995. Region II is reviewing this response and expects to complete the review by November 3, 1995.

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Docket No. 030-09026

License No. 45-14090-02

Licensee Name: Environmental Protection Agency

Site Name: Research Laboratory

Site Address: 9200 Leesburg Pike

City: Vienna State: VA Zip: 22180

Regional Contact: Jay L. Henson Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 750

Background

- \* License No. 45-14090-02 was issued on November 29, 1972, authorizing possession of any byproduct material between Atomic Numbers 1 and 83, inclusive (possession limit of 100 mCi of each isotope, except: Hydrogen-3, 3.0 Ci; Strontium 85, 1.0 Ci; and Strontium 89, 1.0 Ci), Americium-241 (possession limit 1.0 mCi), Plutonium-237, Plutonium-238, and Plutonium 239 (1 milligram each), and Plutonium-241 (0.5 milligram), for research and development activities. The authorized chemical and/or physical form was "any."
- \* The initial inspection of this license was conducted on June 13, 1973. At that time, the inspector found that the licensee was in the process of closing the facility. The inspector reported that the licensee was performing metabolism and bioeffects studies on cats and listed the following radioisotopes as being used: H-3, C-14, Ca-45, Fe-59, Sr-85, Sr-89, Sr-90, and I-131. Metabolism studies involved 0.5-1 microcurie of material per animal and bioeffects studies involved 10-100 microcuries per animal. Information on the number of studies was not in the file. Additionally, standards (sealed sources) with the following isotopes were listed: Sr-90, Co-60, Be-133, and Cs-137. The inspector reported that waste disposal was by decay-in-storage or pickup by Hittman Nuclear and Development Corporation, Columbia, Maryland. Radioactive waste from one sink and one animal run was processed through a series of four tanks (three 1,000 gal. and one 1,500 gal.) before being monitored and released. Records concerning receipt,



## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

Environmental Protection Agency  
9200 Leesburg Pike, Vienna, VA, and  
12709 Twinbrook Parkway, Rockville, MD

License No. 45-14090-02  
Docket No. 030-09026

use, and disposal of licensed material were enroute to the EPA's facility in Research Triangle Park, NC (License No. 32-14048-04) at the time of the inspection. Licensed material was also being prepared for transfer to the North Carolina facility.

By letter dated August 17, 1977, EPA requested that the Vienna, Virginia, license be terminated. In response to an NRC request for additional information, the licensee responded that no radioactive material had been possessed or used at the Rockville, Maryland, location and no americium or plutonium was received under the license. EPA also furnished the results of their closeout survey of the facility, which showed no contamination left at the site. (NOTE: The EPA survey does not specifically address four underground septic-type tanks which could have contained radioactive waste from one sink and an experimental animal area.)

The EPA laboratory was on the property of Hazelton Laboratories (now Hazelton Washington). We have obtained a memo from the Hazelton RSO (Hazelton Washington is a current NRC broad-scope licensee) which documents closeout survey and decontamination action by Hazelton. The Hazelton survey also does not address the underground tanks. The Hazelton RSO states that a portion of the former EPA animal facility is still used by Hazelton as a radioactive waste storage area and that the underground tanks are still in place, but unused.

#### Assessment

With the exception of the underground tanks, surveys of the facility appear to be adequate. There is a potential that the underground tanks could be contaminated with H-3, C-14, and/or Sr-90.

EPA submitted proposed survey/decommissioning plan on February 14, 1994. Region II's comments regarding this plan were forwarded September 21, 1994. EPA submitted a revised survey/decommissioning plan on February 3, 1995. Region II forwarded its comments regarding this plan on February 27, 1995. As of March 21, 1995, EPA had not responded to the February 27 letter.

EPA responded to the February 27 letter in a letter dated April 12, 1995. After review of their response, Region II forwarded a letter to the EPA on May 1, 1995, which approved their proposed survey and decommissioning plan.

EPA is scheduled to begin sampling **of the underground tanks on November 6, 1995**. Region II personnel will be present during the sampling.

STATUS REPORTS FOR SITES REVIEWED WITH SCORES <300

(REMAIN IN OPEN STATUS)

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Docket No. 040-01957

License No. SUB-00081

Licensee Name: Homer Laughlin China Company

Site Name: Homer Laughlin China Company

Site Address: \_\_\_\_\_  
\_\_\_\_\_

City: Newell State: WV Zip: 26050-1299

Regional Contact: Jay L. Henson Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 115

Background

- \* In February, 1959, the Homer Laughlin China Company was issued Source Material License No. C-4475. This license authorized possession of 100,000 pounds of source material for use in manufacturing glazed ceramic tableware (glaze to contain not more than 20% uranium).
- \* In February, 1961, this license was renewed and the license number was changed to SUB-00081.
- \* Records indicate that licensed activities were performed in Plant No. 4 and materials were stored in a vault adjacent to the dispensary at Plant No. 8. Records also indicate that the rinse water from washing equipment used to transport uranium glaze entered the city sewer system and in some cases was washed into a storm drain that emptied directly into the Ohio River. Inspection records indicate that these effluents were estimated to be approximately 40% of the regulatory limits.
- \* In a letter dated February 28, 1972 Homer Laughlin China (HLC) requested termination of their license and stated that all remaining licensed materials had been returned to their supplier. On March 29, 1972, the AEC terminated the license.

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

Homer Laughlin China Company  
Newell, WV

License No. SUB-00081  
Docket No. 040-01957

In August, 1994, the former licensee discovered that it possessed approximately 500 pounds of uranium oxide (UO<sub>2</sub>). Subsequent to this discovery, the licensee hired a contractor to survey areas where licensed materials were used and stored. Several areas of significant contamination were discovered during this characterization survey. HLC sent the results of this survey to Region II on September 28, 1994.

On November 4, 1994, Region II issued a Confirmatory Action Letter (CAL) to HLC to ensure that the uranium oxide was properly stored and secured and that adequate control measures were implemented to protect personnel from the contamination discovered in the facility. On November 17, 1994, a Region II inspector visited the site to determine if HLC had implemented adequate protective measures. HLC had secured the material and the contamination areas as required by the CAL.

On January 5, 1994, HLC submitted their decommissioning plan for the facility. On January 9, 1994, Region II forwarded comments on the plan to HLC. HLC submitted a revised plan on January 10 and Region II approved the plan on January 12.

HLC and its decommissioning contractor began decommissioning effort after approval of the plan. The contractor has completed the decontamination of the majority of the facility and is currently working to complete decontamination of some equipment. HLC and its contractor are having some difficulty in finding an acceptable means to dispose of the waste and bulk material.

#### Assessment

Region II will continue to monitor HLC's progress in decommissioning this facility. A confirmatory survey will be scheduled upon completion of HLC's decommissioning effort and review of their final survey report.

HLC's efforts to decontaminate/decommission their facility continues. Most of the building surfaces have been decontaminated, but some contaminated equipment remains to be removed and either decontaminated or disposed as radioactive waste. Region II has visited the site on two occasions to survey floor areas in some currently operational areas which HLC needed to have released for operational safety reasons. Based upon the Region II surveys, these floor surfaces were determined to not meet the free release criteria and were not approved for release for unrestricted use. HLC and their contractor, Applied Health Physics, are evaluating the conditions which resulted in these areas not meeting the release criteria. Region II will continue to monitor HLC's decommissioning effort.

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Homer Laughlin China Company  
Newell, WV

License No. SUB-00081  
Docket No. 040-01957

Assessment

In a letter dated August 1, 1995, HLC stated that they had completed their decontamination and decommissioning efforts, but had some areas which could not be remediated to the current criteria for release for unrestricted use. HLC enclosed a risk analysis report with the letter with a request that the NRC review the report for the purpose of approving a variance on release of specified equipment and areas from the current release criteria. Region II has completed a preliminary review of the documents submitted by HLC and requested some additional information before a final review is completed. Once this additional information is received, the request will be forwarded to NMSS via a TAR for review and approval.

The HLC request was forwarded for review in a TAR on November 1, 1995.

REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Docket No. 030-09859

License No. 45-10085-03

Licensee Name: Roanoke College

Site Name: Physical Science and Life Science Buildings

Site Address: North College Avenue

City: Salem State: VA Zip: 24153

Regional Contact: Jay L. Henson Phone: (404) 331-0344

Status Summary:

ORNL Final Ranking: 66

Background

- \* In June, 1974, Roanoke College was issued Byproduct Material License 45-10085-03 authorizing the possession of the following:

(1) any byproduct material between Atomic Nos. 3 and 83, inclusive, in any form, with a possession limit of 10 mCi of each, inclusive, except 1 mCi each of Strontium 90 and Iodine 131, and a total possession limit of 100 mCi for all materials

(2) Americium 241 as sealed sources or electroplated discs with an activity limit of 1 microcurie

(3) Cobalt 60 as foils with an activity limit of 30 mCi

The authorized use for (1) and (2) was instruction and laboratory research and for (3) was experiments in surface physics and sputtering.

- \* In December, 1979, this license was amended to a storage only license pending disposition of the licensed materials.
- \* A NRC-314 form dated November 3, 1981, indicated that all materials procured and/or possessed under this license were transferred to the Virginia Polytechnic Institute and State University under their license (45-09475-30). The license was not formally terminated but was simply allowed to expire in July, 1981. There are no records of a final survey performed by the licensee of the facilities where licensed activities were conducted in the docket file and no indication that the NRC performed a closeout survey.



## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

Roanoke College  
Salem, VA

License No. 45-10085-03  
Docket No. 030-09859

- \* In August, 1985, Roanoke College was issued Byproduct Material License No. 45-10085-04 which authorized them to possess 1 mCi of Carbon 14 in any form for use in laboratory research studies. In December, 1986, their license was amended to authorize a maximum possession limit of 2 mCi. This license is currently active.
- \* The authorized locations of use under the 45-10085-03 license compared to those locations authorized under License No. 45-10085-04 are listed below:

<u>Building</u>	<u>45-10085-03</u>	<u>45-10085-04</u>
Physical Science	176, 177A, 177B, 178, 179	
	266B, 266C, 266D	266B, 266C, 266D
	462	
Life Sciences	215, 217	215, 217, 201, 201A, 201B, 217A, 218E
	410	410, 409A, 410A

In a December, 1986, amendment to the current license (45-10085-04), the licensee deleted rooms 266C and 266D in the Physical Science Building and room 409A in the Life Sciences building as areas of use.

#### Assessment

Many of the facilities where licensed activities were performed under License No. 45-10085-03 continue to be utilized for similar activities authorized under the current license (45-10085-04). In a December 4, 1979, letter contained in the 45-10085-03 docket file, the licensee stated that it would submit a report of the surveys conducted in the areas where materials have been stored when all materials were disposed or transferred. This report, if submitted, is not in the docket file.

Region II will send Roanoke College a letter requesting that they send copies of any reports of final surveys performed in those facilities where licensed activities were performed under License No. 45-10085-03 to demonstrate that when this license expired, all facilities met the criteria for unrestricted release. If Roanoke



REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Roanoke College  
Salem, VA

License No. 45-10085-03  
Docket No. 030-09859

- \* In August, 1985, Roanoke College was issued Byproduct Material License No. 45-10085-04 which authorized them to possess 1 mCi of Carbon 14 in any form for use in laboratory research studies. In December, 1986, their license was amended to authorize a maximum possession limit of 2 mCi. This license is currently active.
- \* The authorized locations of use under the 45-10085-03 license compared to those locations authorized under License No. 45-10085-04 are listed below:

<u>Building</u>	<u>45-10085-03</u>	<u>45-10085-04</u>
Physical Science	176, 177A, 177B, 178, 179  266B, 266C, 266D  462	266B, 266C, 266D
Life Sciences	215, 217  410	215, 217, 201, 201A, 201B, 217A, 218E  410, 409A, 410A

In a December, 1986, amendment to the current license (45-10085-04), the licensee deleted rooms 266C and 266D in the Physical Science Building and room 409A in the Life Sciences building as areas of use.

Assessment

Many of the facilities where licensed activities were performed under License No. 45-10085-03 continue to be utilized for similar activities authorized under the current license (45-10085-04). In a December 4, 1979, letter contained in the 45-10085-03 docket file, the licensee stated that it would submit a report of the surveys conducted in the areas where materials have been stored when all materials were disposed or transferred. This report, if submitted, is not in the docket file.

Region II will send Roanoke College a letter requesting that they send copies of any reports of final surveys performed in those facilities where licensed activities were performed under License No. 45-10085-03 to demonstrate that when this license expired, all facilities met the criteria for unrestricted release. If Roanoke



REGION II TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 31, 1995

Roanoke College  
Salem, VA

License No. 45-10085-03  
Docket No. 030-09859

College cannot produce these reports, then Region II will request that Roanoke College perform these surveys in those facilities where licensed activities were performed under License **No. 45-10085-03**, excluding those facilities where licensed activities are currently performed under License No. 45-10085-04. Copies of the Region II and Roanoke College correspondence regarding this matter will be placed in the 45-10085-04 docket file for reference regarding the future decommissioning of these facilities.

Region II forwarded a letter to Roanoke College on March 30, 1995, requesting information on the radiological status of those facilities used under this terminated license which are not being used under their current license (License No. 45-10085-04). As of June 30, 1995, Roanoke College has not responded to this letter. After several attempts, on October 25, 1995, Region II personnel were able to telephonically reach an individual at Roanoke College who agreed to respond to the above letter by November 15, 1995.

**REGION II TERMINATED SITES LIST**

**SITE STATUS REPORT**

**SEPTEMBER 30, 1995**

Docket No. N/A

License No. 45-00953-02

Licensee Name: Department of the Army

Site Name: U.S. Army Engineer Research & Development Laboratories

Site Address:

City: Ft. Belvoir

State: VA

Zip: 22060

Regional Contact: Jay L. Henson

Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 40

Background

In August, 1957, the U.S. Army Engineer Research & Development Lab (ERDL) was issued this license which authorized possession and use of up to 35 millicuries of carbon 14 to study the evaporation rate of thinners and solvents from paints and up to 100 millicuries of thallium 204 to determine the wear rate and film thickness of protective coatings.

The license was amended on several occasions to add mercury 203, cesium 137, rubidium 86, sodium 24 and praseodymium 142 to study expedient shielding materials, and hydrogen 3 to test and evaluate radioluminous materials.

The license was allowed to expire on October 31, 1966. At that time, the only material authorized by the license was hydrogen 3. The docket file does not contain any information on close-out surveys or disposition of licensed material after the license expired.

**REGION II TERMINATED SITES LIST**

**SITE STATUS REPORT**

**SEPTEMBER 30, 1995**

U.S. Army ERDL  
Ft. Belvoir, VA

License No. 45-00953-02  
Docket No. N/A

Assessment

ERDL also possessed byproduct material under License number 45-00953-01 at the same time that it possessed byproduct material under License number 45-00953-02. From a review of the 45-00953-01 docket file, it appears that the activities authorized under License number 45-00953-02 were added to the 45-00953-01 license in an amendment to the -01 license dated January 25, 1967 (amendment application dated September 12, 1966). The -01 license is an active license and includes the same activities as authorized by the -02 license. The -02 license was apparently allowed to expire without formal termination based upon the amendment of the -01 license.

Since the activities, materials and facilities authorized under the expired -02 license are the same or similar to those on the current -01 license, it is recommended that the terminated sites status of License No. 45-00953-02 be changed from "open" to "closed". A copy of this document will be placed in the -01 docket file for future reference.

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

SEPTEMBER 30, 1995

Docket No. 030-01746

License No. 16-00380-03

Licensee Name: Department of the Army

Site Name: Medical Research Laboratory

Site Address:

City: Ft. Knox

State: KY

Zip: 40121-5520

Regional Contact: Jay L. Henson

Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 31

#### Background

In January, 1957, the U.S. Army Medical Research Laboratory (USAMRL) was issued Byproduct Material License No. 16-00380-03 which authorized possession of up to 1 Ci of any byproduct material from Atomic No.s 3 to 83, except Sr-90, Co-60 and Tm-170, in any form for research and development purposes. It does not appear that the licensee ever possessed quantities approaching the 1 Ci limit for any material authorized.

In later years, the license was amended to limit the possession to 50 mCi of any form of any byproduct material with Atomic Nos. 3-83, inclusive, possession of 1-131 in any form to 500 mCi, and possession of H-3 in any form to 500 mCi. These materials were used for in vitro and in vivo (animal) research and development activities. Materials were used and/or stored in ten buildings during the life of the license.

In August, 1977, the licensee requested termination of the license and on November 16, 1977, the NRC terminated the license.

Records indicated that materials were transferred to a waste disposal firm for disposal or sent to the Letterman Army Institute, San Francisco, California. The USAMRL activity was relocated to this facility.

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

SEPTEMBER 30, 1995

Department of the Army  
Medical Research Laboratory  
Ft. Knox, KY

License No. 16-00380-03  
Docket No. 030-01746

The U.S. Army Environmental Hygiene Agency (USAEHA) conducted surveys at USARML in April, 1974 and in April, 1977, to demonstrate that the facilities at Ft Knox could be released for unrestricted use. The NRC conducted a confirmatory survey in September, 1977. No contamination above the criteria for release for unrestricted use was detected during any of the above surveys. Surveys included scans with survey meters and contamination smears.

In February, 1994, the U.S. Army Office of the Surgeon General requested that Region II provide guidance on how to proceed with the demolition of one of the buildings used (1025) for licensed activities. The Army had the building surveyed and on September 29, 1994, a Region II inspector conducted a confirmatory survey of the facility. The building was found to meet the criteria for unrestricted use and was subsequently demolished.

On January 23, 1995, The U.S. Army Medical Department Activity at Ft. Knox sent a letter to Region II describing their proposal regarding any further surveys and disposition of the remaining buildings that were used under this terminated license. On February 27, 1995, Region II responded to the Army's January 23 letter with comments regarding their proposal.

#### Assessment

It appears that the final survey performed by USAEHA in 1977 and the confirmatory survey performed by the NRC thereafter were adequate at the time to demonstrate that the facilities met the criteria for release for unrestricted use. However, to demonstrate this compliance based upon current guidance, the Army intends to conduct some additional surveys of some of the remaining facilities (2nd quarter, CY95). Region II will continue to monitor the Army's progress. Region II will schedule confirmatory surveys of these facilities after review of the Army's final survey report.

Ft. Knox personnel forwarded a revised final survey plan for review and approval by Region II in a letter dated June 9, 1995. Region II personnel will complete their review of this plan in July, 1995.

**Region II completed its review of the survey and decommissioning plan and forwarded its approval to Fort Knox personnel in a letter dated July 27, 1995. Army personnel are tentatively scheduled to begin the survey in early FY 96.**

STATUS REPORTS FOR SITES WITH SCORES >300

(RECOMMENDED FOR DELETION)

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

Docket No. 070-00105

License No. SNM-00109

Licensee Name: American Lava Corporation

Site Name: Production Facility (Building 8)

Site Address: 511 Manufacturers Road

           City: Chattanooga

State: TN

Zip: 37405

Regional Contact: Jay L. Henson

Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 6140

#### Background

License issued to American Lava on August 15, 1957, authorizing possession of up to 2,500 pounds of UO<sub>2</sub> containing uranium enriched to 20% in the U235 isotope, "for use in the fabrication of ceramic type fuel elements." The summary process/equipment description provided with the license application is attached. Detailed process information and a facility description are available in the docket file. The application states that the SNM used would consist of "Mallinckrodt or equivalent grade chemically pure UO<sub>2</sub> powder enriched to a maximum of 20% in the U235 isotope. .,

In November 1957, the licensee requested authorization to process 5,000 grams of UO<sub>2</sub>, enriched to 8%, in their Research Laboratory (which was licensed for source material under License No. C-3469), rather than in the location of use identified in License No. SNM00109, which was still under construction. It is unclear from the file whether this operation took place.

In March 1959, the licensee asked for and received, authorization to receive high-density pellets containing 200 grams of "fully enriched uranium oxide dispersed in thorium oxide at the rate of three to 8 percent uranium oxide to thorium oxide" for testing of their pellet grinding procedures.

Between April and, at least, October 1959, the licensee was producing an order of fuel pellets for Allis-Chalmers Manufacturing Company. The records do not indicate the quantity of material involved in filling this order or if this was the only production order American Lava received.

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

American Lava  
(A subsidiary of 3M Corporation)  
Chattanooga, TN

License No. SNM-00109  
Docket No. 070-00105

On June 28, 1960, the licensee requested that license SNM-00109 be terminated. No information concerning decontamination of the facility was included with the letter.

By AEC letter dated July 13, 1960, the license was terminated.

Between July 1960 and approximately 1981, the licensee had used the facility for processes involving beryllium oxide (BeO). Following termination of the BeO operation, chemical decontamination activities resulted in the removal of floor tiles, ducts, pipes, and interior plasterboard walls, leaving only the building's shell intact.

In July 1982, NMSS requested that Region II conduct a survey of the former American Lava facility. The survey was conducted on August 4, 1982 and documented in an August 27, 1982 memo to NMSS. A small quantity of thorium was found in the trap of an unused drain line and was transferred to an authorized person.

3M's Radiation Safety Officer (RSO) located a memo dated August 31, 1982, in the company's archives. The memo reviews the Chattanooga facility's history and states, "At the completion of the [uranium] work all materials were sent to Northern States Power as fuel elements, or in raw material form to Mallinckrodt, or Davidson Chemical (part of W. R. Grace) and clean up was conducted with surveys performed to determine that the building was cleaned to the then current acceptable release levels. No burial activity was performed on 3M property during this operation." 3M's RSO advised that he had found no other records that described the decontamination efforts in any greater detail.

In 1983, 3M sold the facility to General Electric Ceramics, Inc.

In December 1989, General Electric Ceramics, Inc., stock was sold to Adolph Coors, Inc., and the name of the facility was changed to Coors Electronic Package Company. Coors currently owns the facility. No contact has been made with Coors.

Records of the State of Tennessee Division of Radiological Health and interviews of State of Tennessee, 3M, GE, and former American Lava employees, including the former Vice President and General Manager, Manufacturing Director, Plant Manager, and Division Engineer, has not developed any additional information concerning closeout surveys of the Chattanooga plant.

## REGION II TERMINATED SITES LIST

### SITE STATUS REPORT

OCTOBER 31, 1995

American Lava  
(A subsidiary of 3M Corporation)  
Chattanooga, TN  
Assessment

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Docket No. 070-00105

It was determined that the records did not contain adequate information to ascertain the current radiological condition of this facility. Region II personnel performed a followup inspection of this facility on November 22, 1994. The survey revealed that background radiation levels in the original structure were approximately two times the levels found in an area of the building that was added after licensed activities were discontinued. The survey also revealed that the radiation levels detected at the surface of the soil where a settling pond was formerly located were approximately fifty percent higher than the levels measured from soil near where the settling pond was located.

The results of this survey were forwarded to the current facility owner, Coors Electronic Package Company, in a letter dated January 24, 1995. Based on the results of the survey, it appeared that further investigation, including additional, more sensitive surveys, should be performed in Building 8 and in the area of the former settling pond adjacent to this building to demonstrate that this facility meets the NRC's criteria for release for unrestricted use.

Coors Ceramics Company responded to the report in a letter dated March 3, 1995. Their position is that Building 8 was thoroughly cleaned and renovated since licensed activities were discontinued. They further stated that based upon the review of their files and those of previous owners, they believe the facility is ready for occupancy and that the existing levels of radiation in the facility are due solely to natural background.

Region II plans to request that Coors produce any documentation which describes the type and intensity of decontamination/cleaning efforts which were undertaken in this facility in the past. Region II will also request that Coors produce documents that indicate the settling pond behind Building 8 was established after licensed activities were discontinued. Region II will also attempt to get a better description of the survey performed at this facility by Region II personnel on August 4, 1982, to determine if it was adequate enough to demonstrate that the facility meets the criteria for release for unrestricted use.

**Region II personnel conducted additional interviews with a former employee of American Lava to determine if the settling pond existed and/or was used to support the licensed activities performed under the terminated license. Based upon this interview, it appears the settling pond did not exist when licensed activities were performed. This conclusion is supported by information in the docket file describing the manufacturing process. As described, effluents which may have contained**

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**licensed material were not released from the facility either to a settling pond or to a sanitary sewer.**

**Based upon the above, and additional information obtained during this interview and interviews with former Region II employees who conducted surveys at this facility in 1982, Region II personnel reevaluated their assessment of what additional information is needed to support a recommendation to delete this facility from the list. Region II personnel conducted an additional survey of this facility in July, 1995, to support the reevaluation.**

**The results of the reevaluation and July, 1995, survey were summarized in a memorandum that was submitted for review with the 4th quarter FY 95 site status report. Based upon this reevaluation, it is recommended that the status of this terminated site be changed from "open" to "closed".**