November 8, 1996

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 **(original signed by DM Collins)**
Division of Nuclear Materials Safety

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

The quarterly status reports for those Region Il sites contained on the ORNL list of formerly licensed sites identified as potentially contaminated are contained in Attachments 1 through 4. The status reports for those sites with an ORNL final score greater than 300 which remain open are in Attachment 1 and **those with a score** from 5 to 300 which Region Il has reviewed and remain open are listed in Attachment 2. The status reports for those sites which are **recommended** for deletion are listed in Attachment 3. The sealed source files which have been reviewed and are recommended for deletion are listed in Attachment 4. The information required for the Monthly Information Status Report is in Attachment 5. A tabular summary of all files assigned to Region Il is in Attachment 6.

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) Sealed Sources (recommend deletion)
(5) Monthly Information Status Report
(6) Tabular summary for all Region Il sites

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

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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 1 through 4. The status reports for those sites with an ORNL final score greater than 300 which remain open are in Attachment 1 and those with a score from 5 to 300 which Region II has reviewed and remain open are listed in Attachment 2. The status reports for those sites which are recommended for deletion are listed in Attachment 3. The sealed source files which have been reviewed and are recommended for deletion are listed in Attachment 4. The information required for the Monthly Information Status Report is in Attachment 5. A tabular summary of all files assigned to Region II is in Attachment 6.

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STATUS REPORTS FOR SITES REVIEWED WITH SCORES <300

(REMAIN IN OPEN STATUS)

1.	SUB-00081	Homer Laughlin China Co.
2.	16-00380-03	Army Medical Research Center
3.	STB-00058	Du Pont
4.	C-04327 SUC-00628	Fostoria Glass Company
5.	45-10085-03	Roanoke College

REGION Il TERMINATED SITES LIST

SITE STATUS REPORT

OCTOBER 23, 1996

Docket No. 040-06213 License No. STB-00058

Licensee Name: E.I. DuPont de Nemours and Co., Inc.

Site Name: Belle Works

Site Address: 901 West Dupont Avenue

City: Belle State: WV Zip: 25015
Regional Contact: Jay L. Henson Phone: (404) 331-0344

Status Summary:

ORNL Final Score: 37

Background

License No. STB-00058 was issued on January 30, 1961 for the possession of 1,000 pounds of thorium for use in dispersions of thorium oxides in metal. The license was amended in January, 1962, and the possession limit was changed to 500 pounds.

In its December, 1960 application, the licensee described the source material as a thorium salt, probably thorium nitrate, in a crystal form containing 33 to 48 percent thorium by weight. The facility where the source material would be used was described as a restricted area of dimensions 40 feet by 100 feet with a steel frame and sheet metal building approximately 15 feet by 50 feet. Processing equipment contained in the building included tanks for dissolving, mixing and reacting the thorium salts with metal salts a plate and frame filter press, a combination drying and calcining oven, and a controlled atmosphere furnace. A sink and other laboratory type of equipment was also employed. A hood was also used when source material was handled manually and for exhausting the calcining furnace. The exhaust from the hood was 15 feet above ground and the licensee projected that 18 grams of thorium would be exhausted each day of operations. After handling of the dry source material in the hood, it was mixed with water to limit airborne contamination. The licensee stated he would use air samplers to monitor airborne material and conduct radiation surveys with a portable survey instrument and obtain wipes in work areas to monitor removable contamination. To illustrate its experience with handling hazardous materials, the licensee stated that it had many years of experience in producing catalysts containing chromium compounds which are strongly toxic.

E. I. DuPont de Nemours and Co., Inc.
Belle Works
Belle, WV

License No. STB-00058
Docket No. 040-06213

The methods of disposal of source material included burial and discharge to plant sewage and water effluent stream. As described in the license application, all solid or semisolid thoriumcontaining materials would be accumulated, stored and periodically buried. The burial would be in the plant dump which was located remotely form the plant and was separated **from inhabited areas** by a nest of mountains. All solutions containing thorium would be treated chemically to precipitate as much of the thorium as possible before discarding them. The restricted area was located adjacent to one of the plant's water outfalls which had a minimum flow rate of 20,000 gallons per minute. The resulting concentration of thorium was stated to be below detectable limits and several orders of magnitude below those specified in AEC regulations (Part 20).

An AEC inspector found no items of noncompliance during an inspection conducted on April 23, 1963. No other details of the inspection were in the retired docket file.

The license expired on January 31, 1965. In a memo dated June 6, 1965, an AEC employee stated that he had contacted the licensee on May 27, 1965, and was informed that the licensee had not procured or used thorium since the last inspection (date of inspection not identified). The licensee had 0.43 pounds of thorium which it possessed under a general license since the specific license expired. The retired docket file does not contain any information on the final disposition of the material or surveys performed by either the licensee or the AEC after the license expired and was terminated.

Assessment

RII personnel performed an inspection at the Du Pont facility on August 12, 1996 (Inspection Report No. STB-00058/96-01). The inspector found that Building 202, identified in the former license as the facility where licensed activities were conducted, no longer existed. The building had been demolished several years prior to this inspection, and a much larger facility, Building 291, had been erected at the site. Based upon his observations of the site and discussions with licensee personnel, the inspector determined that no original structure remained from Building 202, and that the construction of Building 291 had apparently included the entire removal of Building 202, and excavation of the area where Building 202 had existed to allow construction of the foundation for Building 291.

The inspector also determined that, as stated in documents contained in the terminated license docket file, the licensee had buried thorium contaminated waste at a site across from the main facility. A licensee document dated October 4, 1961, indicated only three drums of contaminated waste (two 55 gallon and one 30 gallon) were buried at the site on September 29, 1961. This document also stated that the material was buried under six feet of earth and that the radiation levels measured on the surface of the drums prior to burial ranged from 0.5 to 0.7 millirem per hour. The licensee's current radiation safety staff were aware of the site. The inspector visited the burial site and observed that the licensee controlled access to this area and that the area was posted with a sign indicating that radioactive material was

E. I. DuPont de Nemours and Co., Inc.
Belle works
Belle, WV

License No. STB-00058
Docket No. **040-06213**

buried at the site. The licensee's staff stated that as much as sixteen more feet of earth cover had been added to the area since the material was first buried. The licensee periodically inspected the site, but did not perform any radiological surveys in the area or analyze the groundwater obtained from monitoring wells in the area for radioactive material.

It appears that no further investigation is required regarding the facility where licensed material was used under this former license since that facility has been demolished. However, the site will remain in an "open" status until the Draft Branch Technical Position on Screening methodology for Assessing Prior Land Burials of Radioactive Waste Authorized Under Former 10 CFR **20.304** and **20.302** is published in final form. At that time the licensee will be required apply the screening methodology to the burial site and take action as warranted by this document.