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040-07924

Schott Glass Technologies Inc.
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June 8, 1992

Mr. John D. Kinneman, Chief
Site Decommissioning Management Program Task Force
Division of Radiation Safety and Safeguards
UNITED STATES NUCLEAR REGULATORY COMMISSION
Region I
475 Allendale Road
King of P ssia, PA 19406-1415

SUBJECT: S e Remediation Plan
Li ense #STB-988

Dear Mr. Kinneman:

In response to your letter dated 05/01/92 requesting information pertaining to our site remediation plan, the following is submitted:

ITEM 1. Upon revision of our site remediation plan to meet PA DER's requests, we will submit to the NRC a final revised copy along with an official request for the NRC to review and amend our license to include this plan.

ITEM 2. In order to provide the most accurate estimate of the amount of thorium present in the landfill, we would have to compare purchase and production records to the sales (transfer) records. Unfortunately, the sales records for the period in question 1969-1980 are no longer available. We currently only retain sales records for the past three years.

Thorium usage and production records are available. A 26-page log book of thorium usage from 09/18/69 to 07/18/74 indicates that approximately 6,900 lbs. of thorium were used during this period. Thirteen purchase orders dating from 05/07/74 to 05/17/79 indicate approximately 8,000 lbs. of thorium oxide and 2,900 lbs. of thorium nitrate were purchased during this period. This puts the approximate amount of thorium purchased at just over 17,000 lbs. from 1969 to 1980.

The thorium content in the various glass types produced ranged from 5% to 23%. The average of the various concentrations is 17%. However, this figure does not take into account the amounts of production of each

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concentration and may be higher or lower. At an average concentration of 17% thorium, the amount of glass which could have been produced would be approximately 100,000 lbs. based on the amount of thorium purchased.

A letter from a SGT employee to the NRC dated 01/21/81 estimates that approximately 1,000 lbs. of source material may be present in the glass buried in the fill area. This employee is no longer with SGT and it is not known what records his estimate was based on.

Disposal records, whereby Applied Health Physics was working on behalf of SGT, indicate that 22 drums of thoriated glass and 1 drum of thorium oxide were disposed of on 09/03/81 and contained approximately 2,200 lbs. of source material.

A memo dated 08/28/79 on thorium usage indicated approximately 2,400 lbs. of thorium oxide was used in 1978 and approximately 1,100 lbs. of thorium oxide and 1,075 lbs. of thorium nitrate were used in 1979.

Although complete records are not available, the following is known:

- Approximately 17,000 lbs. of thorium oxide and/or nitrate were purchased between 1969 and 1980.
- The amount of glass produced during this period may have been approximately 100,000 lbs.
- Approximately 2,200 lbs. of source material were present in the 23 drums sent for disposal in 9/81.
- Glass was only produced according to sales orders and not simply produced to be put into stock. Therefore, the majority of the glass produced would have been delivered, except for cut offs from the grinding operations or other unsaleable amounts.

ITEM 3. The original estimates of the size of the landfill (1,500 sq.ft. and 2,000 sq.ft.) were based on the limits of where the thoriated glass was believed to be buried. The latest estimate (250 ft. x 250 ft. x 20 ft. deep) is based on a more recent survey and includes the entire area of the landfill, not all of which contains thoriated glass. The entire landfill area will now be included in the remediation proposal due to the other waste types that may be present.

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ITEM 4. We do not have any knowledge of a drum/drums of thoriated waste being buried at our site. A review of all available records did not produce any evidence of such a burial. The only reference to drummed thoriated waste was the 23 drums of thoriated glass and thorium oxide shipped off site for disposal.

In a phone conversation with Mr. Jim Bondick of the NRC on 05/21/92, Mr. Bondick indicated the reference to the drum burial was from a NRC inspector's extended notes from a 1971 inspection. If the NRC can provide further information, such as did this reference come from an employee interview, the employees name, etc.. we can research this matter further to determine its validity.

ITEM 5. We do not have an estimate of the percentage of the thoriated glass which was expected to be recovered in the first 4 feet of excavation according to our previous plan, because it is not known exactly where the thoriated glass is located within the fill area. The previous plan was to remove 4 feet of fill and replace with 4 feet of clean fill for shielding purposes and to maintain the original grade. Any glass discovered within this 4 feet of excavation was to be removed for disposal. The main difference between the original plan and the current plan is that the current plan calls for leaving all material, thoriated glass and mixed lead waste, in place and capping with an impermeable cap to prevent water infiltration and to provide proper shielding of the thoriated glass. This plan will meet all aspects of the previous plan, that is, provide safe and permanent shielding of the thoriated glass. Excavation has been ruled out due to the potential environmental exposures which could be caused by the lead wastes.

ITEM 6. The vast majority (greater than 95%) of the thoriated waste would be present as glass. This is only an estimate but is based on the following:

- Thoriated glass types were only rough cut during the grinding and polishing operations and would therefore create only small amounts of fines.

- There is no known evidence of thorium compounds being buried in the fill area.

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ITEM 7. It is believed the lead from the burial site was transported to the area below during a storm event. The lead is present in the burial area in the form of glass fines and lead oxide which are of very small particle size. The thorium is in the form of glass pieces. The lead would be much more readily transported than the thoriated glass. To confirm this the remediated soil will be analyzed for the presence of thorium.

All of the hazardous material will remain in the burial area when the proposed plan is implemented. The exact quantities of material present in the fill area are not known.

ITEM 8. A diagram of the site indicating SGT's property, the fill area, and the locations of the homes, athletic fields and other adjacent properties will be submitted to the NRC with the new, revised remediation plan.

We will forward the newly revised plan and other related information as soon as it becomes available. If you should have any questions or require any further information, please feel free to contact me. We look forward to working with the NRC to come to a final conclusion of the situation.

Sincerely,

SCHOTT GLASS TECHNOLOGIES INC.

Thomas J. McDonald
Industrial Safety Hygienist

TJM/js
cc: PA DER/Mr. Ed Shoener

Working Copy

MAY 01 1992

License No. STB-988
Docket No. 040-07924

Schott Glass Technologies, Incorporated
ATTN: Steven P. Krenitsky, Director
Manufacturing and Engineering
400 York Avenue
Duryea, Pennsylvania 18642

Dear Mr. Krenitsky:

Subject: Site Remediation Plan

On May 4, 1981 we issued Amendment No. 04 to License No. STB-988 which incorporated your request to dispose of thorium by burial on your property pursuant to 10 CFR 20.302. Since then we have been notified by telephone and in informal discussions concerning the discovery of hazardous materials (lead) in the burial area. As a result you were required to submit the disposal plan to the Pennsylvania Department of Environmental Resources (PADER) review. PADER has required modification of the disposal plan. We must review and approve the modified plan prior to implementation. Therefore, please provide the following information:

1. An official copy of the final Site Remediation Plan and a written request for the NRC to review and amend your license to include the final plan. We cannot take official action on the revised plan without a formal request to amend your license and the appropriate fee.

2. Provide a basis for the estimate that 1,000 pounds of thorium are present on the site as indicated in the March 28, 1990 document from Porter Consultants (PCI-TR-301, Revision 1). This document states that the estimate is based on a comparison of purchases and shipping records of the final product. Discuss the number of records reviewed, the total weight of thorium received, the total amount transferred in product and the amount disposed by other methods.

3. Another item that requires clarification is the variation of the size of the waste site with time. The license renewal application submitted August 8, 1980, Attachment No. 3, indicates that the storage area is approximately 1,500 square feet, completely

fenced in. Then, from surveys dated August 27, 1980 and September 9, 1980, according to a letter dated January 21, 1981, the area of the burial site is 2,000 square feet (120' x 16'). Finally, on June 30, 1988, the waste storage area is estimated to be 250' x 250' x 20' deep. Please account for these changes.

4. Our file contains information which seems to indicate that thorium waste was buried at some location on your site in a drum or drums. Did any such burials occur? How do they relate to the storage/disposal site?

5. Your letter dated April 6, 1990 states that any thoriated glass found during the closure process would be placed in drums and buried at a licensed disposal facility. What percent of the glass did you expect to recover under that plan? What percent do you expect to recover under the plan you currently wish to implement?

6. Estimate the fraction of thorium which is present in the waste as glass, glass polishing residue (fines) and thorium compounds other than glass and your basis for these estimates.

7. Describe the transport of hazardous material (lead) from the burial area to the area below. How do you know that no thorium was similarly transported? How much hazardous material will remain in the burial area when your proposed plan is implemented.

8. Submit a diagram similar to Drawing No. 2 submitted as part of the informal copy submitted to this office of the Contract Drawings and Technical Specification, Job No. 21216-002-032, September 27, 1991 which shows the location of the homes and athletic field downgrade from the disposal site.

We will review your submission as soon as possible after receipt. We would appreciate a response to this request within 30 days of receipt of this letter.

Sincerely,

Original Signed By:
John D. Kinneman

John D. Kinneman, Chief
Site Decommissioning Management
Program Task Force
Division of Radiation Safety
and Safeguards