

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555-0001

June 2. 1998

MEMORANDUM TO: John T. Greeves, Director

Division of Waste Management Office of Nuclear Material Safety and Safeguards

Paul H. Lohaus, Deputy Director Office of State Programs

FROM:

Ronald D. Hauber, Director Nonproliferation, Exports and Multilateral Relations Office of International Programs

SUBJECT: PROPOSED IMPORT OF RADIOACTIVE WASTE FROM TAIWAN (AFPLICATION NO. IW007)

Attached is an application (IW007) from GTS Duratek (GTSD), Oak Ridge, Tennessee for the import of radioactively contaminated waste from Taiwan. Your advice and assistance in the review of the application would be appreciated.

The wastes to be imported are from Chinshan Nuclear Power Station and consists of approximately 612,356 kilograms of contaminated condenser tubing and tube sheets. The tubes are of alloy, most are 76% Copper, 22% Zinc, and 2% Aluminum; a small percentage (6%) are 70% Copper and 30% Nickel alloy. The contamination is primarily Cobalt-60 and Cesium-137; the total activity is 36 mCi (3000 dpm/linear foot removable, less than 1000 dmp/15 cm² fixed activity. In addition to the condenser tubes there are 16 pieces of tube sheets that are ASME SB171 Alloy 365, and measure 232"L x 130"W x 1.125" thick.

The material will be transported from Taiwan to Charleston, SC by ship; GTSD will pick up the material at Charleston and transport it to Oak Ridge, TN by interstate highway. GTSD holds Radioactive Waste Material License Number R-73008-E94.

Due to the low activity levels and nature of the piping, the applicant anticipates that all material received will be free released. Any incidental piping that can not be decontaminated will be added to material consigned to the GTSD metal melt facility and melted into shield blocks. No tubing will be shipped for burial in the United States; therefore, no discussions have occurred with the State of South Carolina or the Southeast Compact for disposal of the radioactive material.

The secondary waste generated such as gloves, booties, tape, etc., will be co-mingled with waste from other sources and treated as GTSD generated waste and disposed of in accordance with GTSD procedures and applicable licenses and permits.

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Multiple Addressee

We would appreciate your review of the attached import license application, including the identification of any additional information the applicant should provide to us.

After all necessary information has been provided, we will forward the application to the Environmental Protection Agency, the State of Tennessee and the Southeast Compact for their review and comments. Steps already taken in regard to public notification and coordination with the Department of State and the authorities in Taiwan, are represented in Attachments 2-5.

Attachments: 1. Application IW007 dated April 15, 1998

- 2. NRC letter to Department of State dated April 30, 1998
- 3. Federal Register notice dated June 2, 1998
- 4. DOS cable to Taiwan dated May 12, 1998
- 5. DOS letter to NRC dated May 20, 1998

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1560 Bear Creek Road P.O. Box 2530 Oak Ridge, TN 37831-2530

IW007 11005033

April 15, 1998

Mr. Ron Hauber, Director Nonproliferation, Exports & Multilateral Relations Office of International Programs U.S. NRC Washington, D.C. 20555

Dear Mr. Hauber:

GTS Duratek (GTSD) requests a license to import radioactively contaminated waste from Taiwan to our facility in Oak Ridge, TN for processing under 10CFR110.20. The material will be shipped to our facility by ship, via Charleston, SC, picked up by GTS Duratek, and transported by interstate highway to Oak Ridge.

C-12.356 kg This waste consists of approximately 1,350,000 pounds of condenser tubes from the Taiwan Power Co. Chinshan Nuclear Power Plant. There are approximately 130,000 tubes that are 22.5 feet long, 1" OD and 0.92" ID. These tubes are of alloy, most are 76%Copper, 22%Zn, 2%Al while a small percentage (6%) are 70% copper and 30% nickel alloy. The contamination is primarily Co60 and Cs137. The total activity is 36 mCi (3000 dpm/linear foot removable, less than 1000 dpm/15 cm² fixed activity. In addition to the condenser tubes there are 16 pieces of tube sheets that are ASME SB171 Alloy 365. These are 232" L x 130"W x 1.125" thick.

Enclosed is our application (Attachment A) and a check (Attachment B) for the amount of \$5,000 for the initial application fee in accordance with 10 CFR170.31, and our radioactive license (Attachment C). If you have any questions, please do not hesitate to call me at (410) 312-5100 or Brian Niekerk at (423) 220- 1223.

Best Regards

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William Greenman Vice President

Attachments

LTR-0012

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I I NJ I C GUY E65 diu Ganiada. Attachment A Application

Name & Address of Applicant

GTS Duratek Corporation 10100 Old Columbia Rd Columbia, MD 21046

Name & Address of Supplier

Taiwan Power Company Nuclear Back End Management Dept 4F, Alley 15, Lane 196 Roosevelt Road Taipei, Taiwan

Country of Origin

Taiwan

Ultimate Consignee

GTS Duratek Corporation Bear Creek Operations

Oak Ridge, TN

Dates of Proposed First and Last Shipments

One Shipment December 1998

Description of Material

1) There are approximately 130,000 tubes that are 22.5 feet long, 1" OD and 0.92" ID. The number of tubes actually shipped may vary due to sectioning for transport. These tubes are of alloy, most are 76%Copper, 22%Zn, 2%Al while a small percentage (6%) are 70% copper and 30% nickel alloy. The contamination is Co60 and Cs137. The total activity is 36 mCi (3000 dpm/linear foot removable, less than 1000 dpm/15 cm² fixed activity). In addition to the condenser tubes there are 16 pieces of tube sheets that are ASME SB171 Alloy 365. These are 232" L x 130"W x 1.125" thick. 2)This is waste Class A material in the form of solid oxides deposited on condenser tubes. The proposed route of shipment is by sea from Taiwan to Charleston, SC. From Charleston, by truck via I26 to I40 to state route 95 to Bear Creek Road. The material will be split into halves, flattened, decontaminated and free released in accordance with our Tennessee Department of Health and Environment approved procedures.

3)Due to the low activity levels and nature of the piping, it is anticipated that ali material received will be free released. Any incidental piping that can not be decontaminated will be added to material consigned to the GTS Duratek metal melt facility and melted into shield blocks. No tubing will be shipped for burial in the United States, therefore no discussions have occurred with State of South Corolina or the Southeast Compact for disposal of this radioactive material. Secondary waste generated such as gloves, booties, tape etc shall be co-mingled with waste from other sources and treated as GTS Duratek generated waste and disposed of in accordance with GTS Duratek procedures and applicable licenses and permits. This is our normal practice and has been discussed previously with the Tennessee Department of Health and Environment, and they have accepted this position. The decontamination solution will be reused on other similar applications.

4) The material will be processed as follows:

Remove the tubes from the shipping container.

Survey tube using continuous feed tube monitor.

If the tube meets free release criteria, the tube shall be packaged for shipment to clean recycler.

If the tube fails free release criteria, the tube shall be staged for decontamination.

Tubes staged for decontamination shall be flattened and split to expose all surfaces (inside and outside).

All surfaces shall be decontaminated using non abrasive methods with decontamination solution.

All surfaces shall be surveyed to ensure that free release criteria are met. Any surfaces that can not be successfully decontaminated using non-abrasive methods shall be abrasively decontaminated using shot blasting.

After abrasive decontamination methods are applied, the tubes shall be resurveyed to ensure free release criteria are met. If the tube meets free release criteria, the tube shall be packaged for shipment to a clean recyler. If the tube does not meet free release criteria after abrasive decontamination methods are applied, the tube shall be recycled via melting into beneficial reuse products (shielding blocks for use in restricted areas).

Tube Sheet Processing Approach:

Tube sheet shall be removed from the shipping container.

The tube sheet shall be size reduced as necessary to allow decontamination.

All surfaces shall be non abrasively decontaminated with de an amination solution.

All surfaces shall be surveyed to ensure that free release crit is are met. Any surfaces that can not be successfully decontaminated using non-abrass e methods shall be abrasively decontaminated using shot blasting.

After abrasive decontamination methods are applied, the tubes sheet shall be resurveyed to ensure free release criteria are met. If the tube sheet meets free release criteria, the tube sheet shall be packaged for shipment to a clean recyler. If the tube sheet does not meet free release criteria after abrasive decontamination methods are applied, the tube sheet shall be recycled via melting into beneficial reuse products (shielding blocks for use in restricted areas).

4)The end use of the material is to sell the decontaminated tubes as scrap. All metals become the property of GTS Duratek and decontaminated material, meeting free-release criteria will be sold as clean scrape material. If material does not meet free release criteria, then it will be recycled via melting into beneficial reuse materials (shielding blocks for use in restricted areas). Attachment B

An import license fee of \$5,000 is attached.