W. R. GRACE & CO.
RESEARCH DIVISION
Washington Research Center, Clarksville, Maryland 21029

GRACE

April 19, 1971

Mr. Donald A. Nussbaumer, Chief
Fuel Fabrication and Transportation Branch
Division of Materials Licensing
USAEC
Washington, D.C. 20545

Regulatory File Cy.

Dear Mr. Nussbaumer: RE: Docket No. 70-456

In your letter of December 8, you pointed out some errors and omissions in our application dated Sept. 22, 1970, pursuant to Title 10, Code of Federal Regulations, Part 70, Special Nuclear Materials License No. SNM-840.

We have corrected the typographical error and are enclosing corrected copies of page 59.

We are enclosing the corrected copies of page 21, which had been inadvertently omitted in our application of Sept. 22.

Inasmuch as we cannot supply detailed labeling requirements at this time, we will continue with the labeling specifications listed on page 39 of the application dated April 8, 1970. We are enclosing additional copies of p. 39, dated April 8, 1970 in the event that they are required for your files.

There are some changes in personnel, as a result of our temporary discontinuation of operations in Bldg. 16-A, but we will defer any additional applications for amendment to SNM-840, until we have definite plans to commence operations.

We will advise your office and the Director of Region I, Division of Compliance in writing, of our plans at least (30) thirty days before we commence operations with special nuclear material.

Very truly yours,

Donato R. Telesca
Plant Manager

DRT:drg
Enclosures

DOCKETED USAEC
APR 23 1971
REGULATORY MAIL SECTION DOCKET CLERK

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Mr. Reese is 45. He did his undergraduate work in Chemical Engineering at the University of Cincinnati and at the University of Alabama the latter as a part of his service in the U.S. Army during World War II. During that service he earned three battle stars in Germany and was decorated with the Silver and Bronze Stars. He left the service with the rank of Captain. He is a member of ANS, AIF, INMM, ASM, and AIMME. He has been and is active on numerous working committees of each.

6.29 Training--Prior to working with fissile materials, each employee who is to work in the nuclear area will attend a four hour basic course covering nuclear criticality safety, radiation safety, and the use and maintenance of safety equipment. These will be followed monthly with safety meetings, each of about one hour duration, on pertinent safety matters including the above.

The part of the basic instruction in safety dealing with nuclear criticality will define the chain reaction, how it is sustained, and describe the mechanisms used to prevent a criticality accident. This instruction will be prepared and presented by the criticality member of the Nuclear Safety Committee, or his alternate.

The radiation safety instruction will include a definition of the types of radiation of concern; exposure mechanisms; operating practices to minimize exposure, and the methods used to determine exposure such as film badges, air sampling, area monitoring and biological analyses. Records will be discussed. This portion of the instruction will be prepared and presented by the radiation safety member of the Nuclear Safety Committee, or his alternate.

Following this basic instruction period, each employee will be instructed in the part of the operation he is to perform. He will be given sufficient

.11 Posting and Labeling-- Areas that may contain radioactive materials are posted in accordance with the provisions of 10 CFR Part 20 and the Plant Manager is charged with the responsibility of implementing the established posting procedures.

In lieu of labeling each package as required by 10 CFR 20.203(f), containers of radioactive material that are not to leave the area are labeled with the type of material, contents and U-235 enrichment. Each container is identified by color coded label or tape, as recommended by the Institute for Nuclear Materials Management, as follows:

Uranium enriched above 5% in U-235--------Yellow

Uranium enriched below 5% in U-235--------Green

Natural Uranium----------Purple

Depleted Uranium----------Gray

In order to avoid confusion, tapes and labels in these colors are not used for any other purpose in the nuclear facilities at the Center.

In addition, individuals are further warned by a sign posted at the entrance to each area where radioactive material may be found which reads:

EVERY CONTAINER OR VESSEL
IN THIS AREA
MAY CONTAIN RADIOACTIVE MATERIAL

Areas or equipment that require the use of goggles or other safety equipment are so posted.

(b) Radiation Safety.

This system is a completely closed liquid system which poses no new problems.

(c) Safeguards.

Material leaves the system as product from the column which is handled as discussed in the next paragraph and a very small quantity may find its way to the cartridge filter which material is eventually accounted for as scrap.

10.5 Particle Washing and Drying--The small beaker of particles taken from the column is transferred to one of the four inch wash containers which is drained of drying agent. The drying agent is piped by way of a cartridge filter to the redrying system. The particles are rinsed with an aqueous solution and placed in a drying tray. These trays, not to exceed one inch in depth, are placed in the vacuum furnace and the particles are dried. Alternatively a one inch thick slab container may be used for this operation. The aqueous wash passes through the particulate filter and to the waste water collection tanks.

(a) Nuclear Safety.

The particles are maintained in safe geometry containers of four inch diameter, or in safe volume slabs. The maximum volume in one location is 4.4 liters of total tray capacity in the furnace. No other trays are permitted in the area and the furnace opening is fitted to accomodate only these trays. The material is not densified appreciably in the dryer but the moderator is removed thus decreasing reactivity.

The maximum particle density at this point is 35% of theory giving a maximum random density in the tray of 2.1 g/cc U-235. The maximum charge