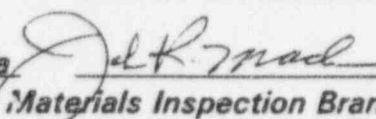


REGIONAL TECHNICAL ASSISTANCE REQUEST FORM

Date: February 20, 1997

Mail or E-Mail to: Donald A. Cool (DAC), Mail Stop: 6H3-OWFN, If E-mail, cc: CLE
Division of Industrial and Medical Nuclear Safety, NMSS

From: John Madera  Region III
Chief, Nuclear Materials Inspection Branch I

Licensee: CERAC, Inc. License No. SMB-1402

- ☐ Control No. _____ (if applicable)
- ☐ Letter dated: _____ (if applicable)
- ☐ Suggested change in licensing procedure (enclosed):
- ☐ Problem/Issue:

The licensee possesses an NRC license to process natural thorium which results in radioactive liquid and air effluent releases to the environment. On December 18, 1996, the NRC identified the licensee had not determined the activity or solubility of liquid effluent discharges into the sanitary sewer system. The licensee's immediate corrective action was to hold all liquid effluent discharges generated from licensed activities in 55 gallon drums until the liquid could be analyzed for activity and solubility. Prior to placing the liquid effluent into 55 gallon containers, the licensee filtered the water with a 0.45 micron filter to remove suspended solids in the liquid. In addition, the licensee also possesses a water scrubber which removes licensed material from air effluent discharges prior to release to the environment.

The licensee sent a faxed letter to the NRC dated February 19, 1997 which contains analysis data of water samples taken from 13 55 gallon (2.09E5 milliliter) containers (One sample from each container) and the scrubber holding reservoir. According to the licensee, each sample was analyzed for dissolved (soluble) and suspended (insoluble) licensed material. The licensee stated that all gross alpha activity was assumed to be thorium-232 decay. According to the licensee, licensed activities generate approximately 14 55 gallon drums (2.93E6 milliliters) per month.

In a faxed letter to the NRC dated February 11, 1997, the licensee stated that approximately 5.44E5 gallons (2.07E9 milliliters) of water per month was used by the licensee and sent through the sanitary sewer system. According to the licensee's calculations in the above letter, one 55 gallon container containing 3E5 microcuries per milliliter of licensed material would be approximately 1% of the monthly sanitary sewer release limit (see 10 CFR 20, Appendix B, table 3: thorium-232). In addition assuming the licensee generates approximately 14 55 gallon of radioactive liquid effluent per month into the sanitary sewer system, the licensee's water dilution factor is approximately 3 orders of magnitude.

The licensee is requesting that radioactive liquid effluent filtered through a 0.45 micron filter be placed directly into the sanitary sewer system without further testing. The licensee stated that NRC Information Notice 94-07 referencing ASTM D 1888-78 "Standard Test Methods for Particulate and Dissolved Matter, Solids, or Residue in Water" infers that all licensed material passing through a 0.45 micron filter is considered soluble for the purposes of releasing licensed material into the sanitary sewer system and that the mentioned filtering system can be used to demonstrate solubility of radioactive liquid effluent discharges into the sanitary sewer system.

☐ *Action Required:*

Determine if passing radioactive liquid effluents through a 0.45 micron filter is an adequate methodology to insure compliance with 10 CFR 20.2003(a)(1), licensed material is readily soluble in water.

☐ *Recommended Action (with revisions):* ☐ *Approve* or ☐ *Reject*

The region believes that passing radioactive liquid effluents through a 0.45 micron filter is an adequate methodology to insure compliance with 10 CFR 20.2003(a)(1). As supporting evidence, NRC Information Notice 94-07 referencing ASTM D 1888-78 "Standard Test Methods for Particulate and Dissolved Matter, Solids, or Residue in Water" does appear to infer water passed through a 0.45 micron filter does not contain significant quantities of suspended solids. In addition, the region believes the small quantity of "suspended" licensed material identified by the licensee in the 55 gallon containers and scrubber holding reservoir combined with the 544,000 gallon dilution water from the licensee's facility into the sanitary sewer system does not pose a significant health risk to members of the general public.

Remarks:

Enclosed are the documents, in whole or in part, as stated above.

If you have any questions, please contact Michael M. LaFranzo by phone, 630-829-9865 or E-mail, address MML.

Attachment A: License: letter dated February 19, 1997
Attachment B: Licensee letter dated February 11, 1997
Attachment C: NRC Information Notice 94-07
Attachment D: ASTM D 1888-78 "Standard Test Methods for Particulate and Dissolved Matter, Solids, or Residue in Water"

Headquarters Reviewer: Joseph DeCicco

Regional Reviewer: Michael LaFranzo

Reviewer Code: M7L

Reviewer Phone No.: (630) 829-9865 Fax No.: (708) 515-1259

Request Needed by: 3/3/97 (date)

*cc w/o att: C. Pederson, RIII
Inspector, RIII*

Form TAR-1010/96