

METROPOLITAN EDISON COMPANY

Subsidiary of General Public Utilities Corporation

Subject Duke Power Solidification Test

Location Unit 2 Admin. Bldg.

Date December 31, 1980
TMI-II-R-20639

To G. K. Hovey

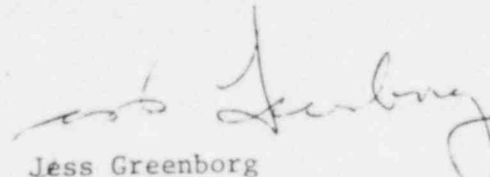
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Reference: TMI-R-4966

In response to your request, I called Art Duckworth regarding the observed deviations on their full size solidification test.

They are satisfied with the results. They believe the noted items were insignificant deviations from the free-standing homogeneous monolith requirement. They do not intend to seek approval from any agency regarding acceptability of these results.

Duckworth is planning to use a Dow portable system at the McGuire plant until the industry settles on a solidification media. The McGuire station has a permanently installed UF system which will be replaced. They have shied away from cement out of fear of getting batches which won't set.


Jess Greenberg
Recovery Support Engineering

JG/ajs

cc: J. J. Barton
J. C. DeVine, Jr.
G. R. Skillman
D. R. Buchanan
C. P. Deltete
E. D. Fuller
R. J. McGoey
R. I. Newman

R0383

INTER-OFFICE MEMORANDUM

8212010223 801231
PDR ADOCK 05000320
P PDR

OCT 8 1980

September 22, 1980

Copy to Powell

Raymond Powell
Project Engineer, Mobile Solidification
Chem-Nuclear Systems, Inc.
One Greystone West Building
240 Stoneridge Drive, Suite 100
Columbia, S.C. 29210



Disturb - KHK
Shel
Dennis - D
Bruce Owens - D
Marty Carson

Dear Ray,

The Radwaste Chemistry group would like to express its appreciation for the support we received from Chem-Nuclear personnel during recent solidification-testing using the DOW process here at McGuire. *mobile units.*

The solidified liners, two 80:20 resin (80 ft³) and one concentrates (195 ft³), were cut apart and inspected for monolith quality and integrity at the conclusion of our testing program.

Per our phone conversation on September 9, the following is a short summary of observed results.

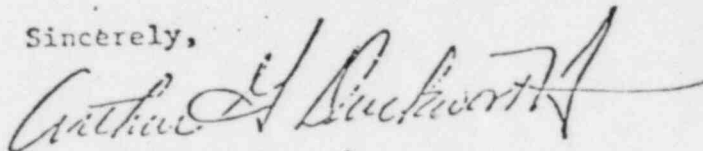
A full length (top to bottom) triangular section was removed from the 195 ft³ liner and one of the 80 ft³ liners. The concentrates and resin monoliths met all acceptance criteria per ANSI/ANS 55.1, "free standing homogeneous monolith", Barnwell Site Disposal criteria, Section 6, and S.C. Radioactive License 97 with the following noted items:

- a) The top 1/4 - 1/2" of the concentrates liner (195 ft³) monolith was slightly spongy, however, this hardened within 72 hours.
- b) There were also two small thermal expansion fissures near the top of the monolith that oozed boric acid crystals after exposure to the environment.
- c) Both of the fissures were internal and exposed only after cutting.

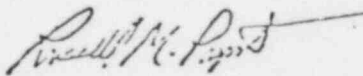
- d) The resin monolith looked excellent with the exception of one small pocket of resin beads, approximately 8 mm in diameter, 3 inches below the top of the slice. However, as with the concentrates monolith, the pocket was internal and not exposed until the monolith was cut.

Please feel free to contact us if any further information is required.

Sincerely,



Arthur G. Duckworth
Radwaste Chemistry Supervisor
McGuire Nuclear Station



Russell M. Propst
Radwaste Chemistry Coordinator
McGuire Nuclear Station

AGD/jgm

cc: G.W. Cage
T.L. McConnell
R.P. Michael
M.L. Birch
P.F. 9.4.1.2
WS File
Radwaste Staff