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

File

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 batchs which won't set.

Jess Greenborg
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

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
CORNELIUS, N. C. 28031

OCT 8 1980

Copy to John Pettit

Distrib - KHK
Shel
Dennis - D'
Bruce Owens
Marty Carson

September 22, 1980

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

OCT 1980
RECEIVED
CHEM NUCLEAR
SYSTEMS, INC.
EASTERN OFFICE

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 mobile unit here at McGuire.

The solidified liners, two 80:20 resin (80 ft^3) and one concentrates (195 ft^3), 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 ft^3 liner and one of the 80 ft^3 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 ft^3) 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