



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

January 15, 1980

MEMORANDUM FOR: S. J. Maughan, Security Supervisor, Unit 2
FROM: J. T. Collins, Deputy Director, TMI Support
SUBJECT: ESCORT BADGES FOR UNIT 2

Listed below are NRC personnel who require authorization for escort badges for Unit 2. Please enter this information in your files. If there are any questions concerning this request, please don't hesitate to contact me on extension 8229.

<u>NAME</u>	<u>BADGE #</u>
J. Collins	20075
J. Lee	5515
R. Weller	4055
G. Kalman	7825
L. Bell	5946
M. Greenberg	6279
A. Ignatonis	4653
R. Conte	3979
D. Haverkamp	3149
T. Martin	4941
K. Plumlee	7331
L. Prough	6815
W. Sigman	6816
A. Fasano	8316

John T. Collins
J. T. Collins
Deputy Director
TMI Support

JUL 31 1979

File Solid Waste

MEMORANDUM FOR: R. Dale Smith, Chief, Low-Level Waste Licensing Branch
 Division of Waste Management, NMSS

FROM: John T. Collins, Deputy Director, TMI Support, NRR

Richard L. Bangart, Acting Chief, Effluent Treatment Systems
 Branch, Division of Site Safety & Environmental Analysis, NRR

SUBJECT: EVALUATION OF BROOKHAVEN SOLIDIFICATION RATIONALE AND FREE
 STANDING WATER CRITERIA

We have been delayed in submitting our comments on the subject Brookhaven rationale and criteria due to our limited resources in light of the high priority TMI support effort. Since this rationale and criteria are being used to support the development of your Branch Technical Position on the Solidification of Resins and Sludges, we believe the important comments contained in the attachment should be carefully considered.

ORIGINAL SIGNED BY
 JOHN T. COLLINS

John T. Collins, Deputy Director
 Three Mile Island Support Staff

Original Signed By:
 Richard L. Bangart

Richard L. Bangart, Acting Chief
 Effluent Treatment Systems Branch
 Division of Site Safety and
 Environmental Analysis
 Office of Nuclear Reactor Regulation

Enclosure:
 TMI Support & ETSB Comments

cc: D. Muller
 G. Knighton
 R. Vollmer
 W. Kreger
 R. Weller
 B. Rusche

DISTRIBUTION:
 Central File
 NRR Rdg File
 ETSB Subject File 12.5
 ETSB Reading File
 JTCollins
 RLBangart

OFFICE	DSE:SA/ETSB	TMI Support		
SURNAME	RBangart:do	JTCollins		
DATE	07/30/79	07/31/79		

7108280510 CF

TMI SUPPORT AND ETSB COMMENTS ON BROOKHAVEN "DEVELOPMENT OF
FREE STANDING WATER CRITERIA AND
RATIONALE FOR REQUIRING THE SOLIDIFICATION OF
ION EXCHANGE RESINS AND SLUDGES"

A. General

1. It appears premature to develop waste performance criteria independently or in advance of additional criteria that will be developed for burial ground suitability. Certainly burial ground criteria that will be established in such areas as seismology, hydrology, geology, waste segregation, container integrity, volume reduction, etc., will influence the selection of those criteria that are necessary for FSW and resin/sludge solidification. Applicable waste performance criteria may vary with the location of the burial ground site. We recommend that waste performance criteria be developed in concert with burial ground performance criteria.

2. The technical justification for both the free standing water criteria and the ion exchange and sludge solidification rationale is neither complete nor convincing. Container improvement is not given serious consideration, nor is adequate trench design. It's very difficult to recommend solidification with no quantitative evaluation of the risk associated with nonsolidified waste and no quantitative evaluation of the benefit. What standard or goal is the recommendation for solidification designed to achieve? Using the hypothetical measure of \$1000/man-rem, is it cost-beneficial to solidify resins? Does a trench model exist for dose-pathway analysis? An evaluation of different solidification agents, especially UF, needs to be performed.

Before positions are established, the technical justification must be sound. To act otherwise is likely to result in criticism and the possibility of having to withdraw from this position at a later date.

3. In addition to our concern about the technical inadequacies of the rationale supporting resin/sludge solidification, a major concern also exists about implementation of such a requirement. For new licensing actions, ETSB is implementing its requirement that all wet wastes be solidified, and in this regard we support your proposed BTP requirement for resin/sludge solidification. For reactors presently operating, however, which did not have proven resin/sludge solidification systems available to them at the time of plant construction, the wet waste solidification requirement is being implemented on a case-by-case basis as the Radiological Effluent Technical Specifications (implementing 10 CFR Part 50, Appendix I) are issued. In our discussions with utilities to date, convincing arguments for not backfitting solidification systems that have the capability to solidify all wet wastes have been presented. These arguments include excessive cost, possible increased occupational exposure, a history of successfully transporting and burying dewatered resins and sludges with no significant identifiable adverse impacts, inability to identify significant benefits that would be derived from solidification, and the fact that no requirement presently exists in a NRC or Department of Transportation (DOT) regulation. We have not yet required an operating reactor to backfit a resin/sludge solidification system or to submit a schedule for backfitting. We have required

that dewatering operations be addressed in the licensee's Process Control Program (PCP). The implementation of the wet waste solidification requirement should be coordinated between NMSS and NRR in order that waste generators and waste disposers have compatible criteria. The promulgation of a branch position that requires resin/sludge solidification will likely be endorsed by Agreement States that license burial grounds. If this requirement is blindly incorporated into burial ground licenses without consideration of waste generation capability to meet this requirement, chaos in the industry would result.

B. Specific

1. Pg. 8, second paragraph

The statement is made that "no FSW" has been understood to mean less than one percent by volume. NRR licensing reviews of LWR solidification systems have never taken the position that $\frac{1}{2}$ gallon of FSW per 55-gallon drum or $7\frac{1}{2}$ gallon of FSW per 100 cubic foot liner is acceptable. NRR's position as contained in Standard Review Plan (SRP) 11.4 and BTP ETSB 11-3 requires the absence of FSW after solidification. ANSI N198 also contains a provision that the radwaste container shall contain no free liquid. An effective PCP and/or a method of FSW detection is required to assure that no FSW exists after solidification. Small amounts of water of condensation that contain little or no radioactivity have not been prohibited. To minimize transportation accident consequences, container corrosion, and potential burial ground problems, an approach similar to that used in NRR licensing criteria which requires the absence

of free water should be used at this time. An effective PCP can provide this assurance.

2. Pg. 8, line 19

The constituents in FSW which contribute to a decrease in local soil sorption should be identified.

3. Pg. 11, line 15

Concerning the site experience to date, has the geology succeeded in providing the ultimate barrier? Have health hazards been identified in burial site environments? The report should draw on the USGS studies to date.

4. Pg. 12, line 10

What are resin leach rates for water from the burial site trenches? Are resins in the burial ground actually subjected to a leaching environment? How well does the laboratory leach test simulate the burial site environment. The report is noticeably lacking in discussion of actual burial site experience.

5. Pg. 12, line 12

Specify the liquids to which unsolidified resins might be exposed in burial. What are the chemical properties of the burial site liquids which have been drawn from samples?

6. Pg. 13, line 8

Specify the frequency of container failure during handling at the burial site.

7. Pg. 13, line 10

Substantiate the statement of particulate matter dispersal by wind with data taken from air samplers during burial site operations.

8. Pg. 14, line 5

Shipping casks are designed for the sole purpose of withstanding postulated accident conditions. At \$100,000 apiece or more, it would hardly be cost-effective to use shipping casks as burial casks.

9. Pg. 14, line 14

The report fails to mention the impact of resin and sludge solidification on available burial space.

10. Pg. 14, line 17

A more realistic packaging efficiency is 0.6.