



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

JUN 19 1980

Mr. J. Bruce Owen  
Group Leader  
Solidification Processes  
Functional Products and Systems  
Dow Chemical USA  
Larlein Laboratory  
Midland, Michigan 48640

Dear Mr. Owen:

Subject: Review and Acceptance of Topical Report DNS-RSS-001-P, "The Dow System for Solidification of Low-Level Radioactive Waste from Nuclear Power Plants"

The Nuclear Regulatory Commission staff has completed its review of the Topical Report DNS-RSS-001-P, "The Dow System for Solidification of Low-Level Radioactive Waste from Nuclear Power Plants." The Topical Report provides an introduction, the system description, process parameters, equipment layout description and operation, the functional description and relevant diagrams, applicable regulation citation, the description of quality assurance program, the description of the research and development program, an operating experience brief, postulated accident analysis and references. A summary of our evaluation of the topical report is attached.

As a result of our review, the principal findings are: (1) the Dow System is capable of safely processing wet solid radioactive waste generated by light water reactors, (2) the solid waste product is a uniform mixture of finely dispersed liquid particles in a continuous matrix; when cured there is an absence of free water and (3) the annual release of radioactive materials in gaseous effluents is expected to be insignificant relative to other sources within the plant; off-gas is routed through the plant exhaust ventilation system.

We find the topical report an acceptable reference for light water reactor license applications. We will require that fire protection and interfaces with plant systems, such as ventilation, waste holding tanks, flush water and shielding requirements, be considered interface requirements that will have to be addressed by applicants referencing the topical report. License applications for other than light water reactors which reference the Dow Chemical topical report will be evaluated on a case by case basis. Applicants utilizing the Dow System are to include in their plant fire hazard analysis, information that demonstrates how safety related systems are protected from possible fires, in accordance with Branch Technical Position ASB 9.5-1.

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Mr. J. Bruce Owen

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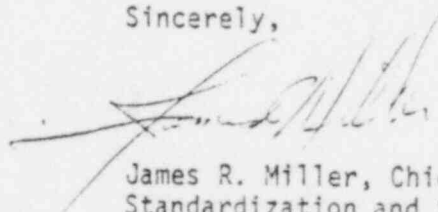
We do not intend to repeat the review of the safety features described in the topical report and found acceptable in the attachment. Our acceptance applies only to the use of features described in the topical report and as discussed in the attachment.

In accordance with established requirements, it is requested that Dow Chemical USA issue revised versions of the reports, proprietary and non proprietary, within three months of receipt of this letter and the attached evaluation.

Should Nuclear Regulatory Commission criteria or regulations change such that our conclusions as to the acceptability of the report are invalidated Dow Chemical and/or referencing applicants will be expected to revise and resubmit the topical report and the referencir, document or submit justification for the continued effective applicability of the topical report without revision.

If you have any questions about our review of this Dow Chemical topical report, please contact us.

Sincerely,



James R. Miller, Chief  
Standardization and Special  
Projects Branch  
Division of Licensing

Enclosure:  
As stated