

NOV 20 1989

Dr. Michael Ryan  
Executive Director  
Regulatory Affairs  
220 Stoneridge Drive  
Columbia, SC 29210

Dear Dr. Ryan:

As a follow-up to the telephone discussion between Bill House and Keith McDaniel of our respective staffs, we are enclosing a request for information on the Process Control Program (PCP) to be followed by Chem-Nuclear in your waste cement solidification efforts. The enclosure is intended to identify the specific information that would be presented in a PCP document and which would typically accompany a waste cement solidification topical report. It is anticipated that the requested PCP information will be submitted by Chem-Nuclear at the same time your responses are provided to the second round review comments on topical report #3 which will be transmitted to you by November 17, 1989.

Please feel free to contact me (301-492-0590) or Keith McDaniel (301-492-3448) if you have any questions.

Sincerely,

Original Signed By

Michael Tokar, Section Leader  
Technical Branch  
Division of Low-Level Waste Management  
and Decommissioning, NMSS

Enclosure: As stated.

Distribution: Central File # WM-98  
NMSS r/f      LLTB r/f      JSurmeier      McDaniel      MTokar      MBell  
Plohaus      JGreeves      RBangart

PDR      Yes:

PDR      No:       Reason: Proprietary       or CF Only

SUBJECT ABSTRACT:      ACNW      YES:       NO:

OFC :LLTB	:LLTB	:LLTB	:LLWM	:LLWM
NAME:KMcDaniel/TJ	:MTokar	:JSurmeier	:	:
DATE:	: 11/14/89	: 11/15/89	:	:

WM-98  
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**REQUEST FOR INFORMATION ON THE PROCESS CONTROL PROGRAM**

The vendor is requested to provide as part of the waste form qualification topical report, the information identified herein regarding the process control program (PCP). As indicated in the Branch TP on Waste Form, a PCP is to be used to assure that the solidification process will consistently produce a product which is acceptable for disposal. Specifically, the information on the type and quantities, (e.g. volumes, weights) of the ingredients to be used in the cement waste form formulation for each waste stream should be provided as well as the procedures and details of the waste form preparation. The feed waste material should be solidified using the recipe that has been qualified for that waste stream. The details of the preparation of the verification sample should duplicate, to the extent practicable, those of the full-scale field waste forms as well as those of the qualification program described in the topical report. The vendor should provide the above requested information for both the full-scale field waste forms (e.g., solidified liners or drums) and for the PCP laboratory scale verification and surveillance specimens. By supporting discussions and typical mixture calculations, the vendor should demonstrate how the recipes and details of preparation for full-scale and laboratory-scale waste forms have been correlated. For each waste stream the vendor should be specific in the typical mixture calculations, for example, identify the ingredients (e.g., number of bags or weight of cement/additives and quantity of a particular waste per 100-cubic-foot liner) and show how these calculated values correlate with the quantities of cement and waste used in the preparation of the qualification and PCP verification samples in the laboratory. (Note that "ingredients" include the waste, cement, additives, and added water, and the details of preparation include the order of addition, and the method, procedures, temperature and time required for mixing the ingredients and for curing of the waste form product.)

In the PCP, the vendor is requested to identify the acceptable ranges for all waste parameters (e.g. temperature, concentrations, pH etc.) as had been determined in the qualification test program. The PCP should describe where adjustments could be made, if any, to the waste prior to solidification in the event certain waste parameters fell outside of the acceptable range. This would only apply where adjustments would not result in a waste stream that was chemically or physically different from that qualified.

The PCP should indicate how representative samples of the feed waste are to be obtained for preparing PCP verification samples. The PCP needs to identify typical and maximum batch sizes and the number of PCP specimens to be taken for each batch. The topical report should also explain how the number of PCP samples per batch was established. The PCP needs to describe the time prior to full-scale solidification that the PCP verification samples will be taken and prepared, the curing conditions (e.g. temperature, location) to be followed and the visual examinations (e.g. checking for presence of free liquid, cracking, spalling or disintegration) and testing to be performed.