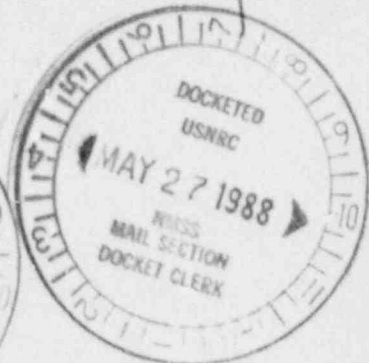




RETURN TO ~~396-SS~~ PI-137
 Department of Energy
 Idaho Operations Office
 West Valley Project Office
 P.O. Box 191
 West Valley, NY 14177

M-32
 PDR | LPDR

May 20, 1988



Mr. R. L. Bangart, Acting Director
 Division of LLW Management
 and Decommissioning
 U. S. Nuclear Regulatory Commission - HQ
 Washington, DC 20555

SUBJECT: Additional Comments on Draft Process Control Plan for the West Valley Demonstration Project (WVDP)

Dear Mr. Bangart:

My letter to M. Knapp, dated May 16, 1988, "Supplementary Qualification Testing of WVDP Low-Level Waste Formulation," provided responses to questions raised by the NRC regarding product qualification and process control of the Cement Solidification System. Your letter of May 13, 1988, posed an additional two questions which were identified as Enclosure 2.

The subject matter of these questions were discussed in detail with NRC staff in a meeting here at West Valley on May 3-4, 1988 and written responses are enclosed. We believe that our reply in the May 16, letter and the enclosed, are responsive to all of NRC's concerns regarding the low-level cement waste form.

Sincerely,

W. W. Bixby
 W. W. Bixby, Director
 West Valley Project Office

Enclosure

- cc: J. P. Hamric, DOE-ID, w/out enc.
- R. D. Hurt, NRC-HQ, w/enc. ✓
- S. Marchetti, WVNS, w/out enc.
- T. W. McIntosh, DOE-HQ, w/out enc.
- T. L. Sonntag, NYSERDA-WV, w/out enc.
- R. A. Thomas, WVNS, w/out enc.

EM:043:88 - 0381:88:10

EM:LCW

additional information
 24355
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 N/A

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Enclosure 2

Additional Comments on Draft PCP

- A. Comment No. 6 in Enclosure 1 concerns sample verification sampling. It is suggested that sampling for total organic carbon from the output of the waste dispensing vessel be considered as part of that lab-scale sample verification process.

WVNS RESPONSE

Refer to Item 6, page B-4 of letter to M. E. Knapp, Letter No. EM:041:88 - 0381:88:10 - WVNS does not consider it necessary to sample from the waste dispensing vessel since the only feed to the waste dispensing vessel are tanks 5D-15A1 and A2 which have been characterized, confirming homogeneity, during testing and will be sampled prior to transfer during production.

As discussed at the May 3 and 4 meeting, the following approach will be taken regarding total organic carbon (TOC):

- o The contents of 8D-2 (main tank) have been sampled repeatedly in the past and based on chemical and radiochemical analyses been determined to be a homogeneous tank. The supernatant has been sampled at least six (6) different levels with the analyses being consistent. Based on the tank being well mixed the total organic carbon is expected also to be homogeneously distributed.
- o The total organic content of the tank has been evaluated at 150 ppm. It is not expected that the supernatant TOC will deviated from 150 ppm, however the recipe was developed and is currently undergoing supplementary testing to support production of a qualified waste form for zero to 900 ppm TOC concentrations. If any fluctuation of the total organic carbon does occur, the recipe will be qualified to handle a variation between zero and 900 ppm TOC.
- o Deviations from the expected chemical or radiochemical parameters would indicate that the TOC concentration is also deviating from the 150 ppm concentration. If this occurs then WVNS will analyze for TOC. This agreement was reached with NRC at the May 3-4, 1988 meeting at West Valley.
- o Presolidification testing is performed prior to operation of the Cement Solidification System (CSS). The presolidification sample will be taken per batch of waste processed through 5D15A1 or 5D15A2. If the TOC concentration is above 900 ppm in the presolidification sample the presolidification test would provide negative results. This test is used to make sure the waste can be solidified. If the TOC is too high the test results will indicate there is a problem.

Enclosure 2

Additional Comments on Draft PCP

In summary, WVNS has a competent approach to insure that TOC concentrations are not fluctuating. If at any time there is an indication that TOC levels are changing then TOC will be measured.

- B. In regard to verification sampling in general, the NRC staff has prepared draft guidelines for preparation of a solid waste process control program, and the WVDP has those draft guidelines, which were discussed in part at the May 3 and 4, 1988 meeting at West Valley. As noted on Page 4, in the paragraph titled, "Verification Sampling," it is indicated that the verification sample should be obtained from at least every tenth batch of waste processed or a sample obtained for at least every 5000 gallons of batch waste processed, whichever is more frequent. The PCP should address how the intent of the PCP guidance document will be satisfied with regard to sampling frequency.

WVNS RESPONSE

The supernatant to be processed by WVNS exists of a finite lot (waste stream), which has demonstrated homogeneity during previous sampling efforts. This waste stream has been isolated in 8D-2 tank.

Current sampling plans and operating procedures establish analytical analysis and instrumentation monitoring of each lot of supernatant processed from tank 8D-2, before, during and after STS/LWTS processing. Any deviations or trends in the waste stream from 8D-2 will be identified prior to CSS by these controls.

In addition to the instrumentation and analytical monitoring of the waste stream, WVNS is committed to one presolidification sample of each lot of supernatant prior to CSS processing. Initiation of CSS processing is dependent upon the results of these samples. WVNS will process from tank 5D15A1 and 5D15A2, the maximum capacities of these tanks are 5 and 10 thousand gallons respectively. Tank homogeneity has been verified through repeated sampling during start up and testing activities.

Testing and sampling has shown that the only impact on the tank homogeneity would be loss or addition of liquid to the storage tanks due to evaporation or inadvertent additions of liquid. This type of change would be reflected in a waste stream density change.

Instrument monitoring and controls have been established for verification that no change in the waste stream density is encountered. This is done by instrumentation in the two feed tanks and the waste dispensing vessel which feeds the mixers. Variation outside the established control limits for density, which have been demonstrated to be within the acceptable recipe limits, mandates additional presolidification sampling to be done.

Enclosure 2

Additional Comments on Draft PCP

In summary each homogeneous batch of 5 or 10 thousand gallons will be analyzed prior to solidification. Any variation in the waste stream will be noted and corrected during processing prior to presolidification sampling. Continuous monitoring for density, by process instrumentation will alarm any changes and require resampling.

The activities associated with sample verification will be incorporated into the process control plan.

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CONTROL NO. 24355
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