



**BP CHEMICALS**

BP Chemicals Inc.  
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**VIA OVERNIGHT MAIL**

Mr. Sam Nalluswami, Project Manager  
Low-Level Waste and Decommissioning Projects Branch  
Division of Waste Management  
Office of Nuclear Materials and Safeguards  
United States Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Road  
Rockville, MD 20852

May 25, 1994

Re: License No. SUB-908  
Docket No. 040-07604

Subject: March 31 and April 1, 1994 Meeting with NRC to Review  
License Amendment Application for On-Site Disposal of  
Pool Closure Mixed Waste

Dear Mr. Nalluswami:

On April 25, 1994, BP Chemicals submitted a list of fourteen items identified during the March 31 and April 1 meetings as needed by the NRC to facilitate its review of our license amendment application for onsite disposal of low-level mixed waste. This letter will serve as a transmittal for the requested information as specified below:

**Item 1. Reevaluate the 1.11 isotopic ratio (Total Uranium /Uranium 238) utilized in project calculations in light of the NRC's default ratio of 1.3 for depleted uranium.**

Response: Based on discussions with our consulting engineers, BP Chemicals has decided to utilize the NRC's default ratio of 1.3 for use in all calculations. We will substitute this number for the previously used value of 1.11. This change necessitates revision to the following sections of the license amendment application:

- *Item 5. - Radioactive Material*
- *Item 9. - Facilities and Equipment*
- *Item 11. - Waste Management (following portions only)*
  - Section 1.0 - Description of Waste*
  - Section 3.0 - Summary of Removal Efforts*
  - Section 7.0 - Geotechnical and Hydrogeological Evaluation*
  - Table 3.1-1 - Sludge and Binder Agent Mixture Summary*

The affected text within these sections of the application has been revised to incorporate the change to a 1.3 isotopic ratio. The revised pages are attached as **Exhibit A**.

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- Item 2. Update the report entitled *Summary of Radioactivity, Mixed Waste Pond Closure Project, BP Chemicals, Inc., Lima, Ohio* (originally submitted on March 1, 1994) in reconsideration of the isotopic ratio on which the calculations are based. Also provide in the report a tabulation of the analytical data on which the report is based and a map showing the analytical sampling locations. The map will show whether or not any pattern of hot spots exists within the sludge deposits in the ponds.**

Response: The report entitled *Summary of Radioactivity, Mixed Waste Pond Closure Project, BP Chemicals, Inc., Lima, Ohio* has been revised to incorporate the 1.3 isotopic ratio for depleted uranium. In addition, the report has been expanded to include the tabulated results of the sludge activity analyses. A set of figures showing the lateral distribution of activity within the ponds at various depths has also been added. The revised report is attached as **Exhibit B**.

- Item 3. Revise *Appendix A - Safety Analysis Report, Closure Activities* of the license amendment application in reconsideration of the isotopic ratio.**

Response: The report entitled *Safety Analysis Report, Closure Activities* has been reviewed in light of the change in isotopic ratios. BP Chemicals' consulting health physicist has determined that the change does not impact the SAR and therefore no revision is warranted. His evaluation is attached as **Exhibit C**.

- Item 4. Revise *Appendix B - Analysis of Long Term Radiological Impacts of On-Site Disposal* of the license amendment application in reconsideration of the isotopic ratio.**

Response: The report entitled *Analysis of Long Term Radiological Impacts of On-Site Disposal* has been revised by our consulting engineer and is attached as **Exhibit D**.

- Item 5. Modify *Appendix E - Quality Assurance and Quality Control Plan* of the license amendment application to include a procedure for measuring activity level of each batch of stabilized sludge as it is placed in the disposal cell. It is our understanding that the average activity of all stabilized sludge placed in the cell cannot exceed 300 pCi/g of total uranium and that, consistent with the statistical interpretation of Chapter 8, NUREG/CR-5849, no individual batch can exceed 900 pCi/g in order to comply with Option 2 criteria.**

Response: *Appendix E - Quality Assurance and Quality Control Plan* is being revised to include a new section which covers radiological sampling and analysis of stabilized sludge. This section, entitled *Section 11.0 - Sludge Sampling Prior to Placement*, will describe the procedure for collection of samples and testing to determine the average and maximum activities of the stabilized sludge prior to placement in the cell. The new section and a revised *Appendix E - Table of Contents* will be submitted upon completion under separate cover.

- Item 6. Provide documentation demonstrating that BP Chemicals has historically utilized only oxides of uranium in the manufacture and use of acrylonitrile catalysts, and that no uranium fluoride compounds have been processed or handled at the Lima site. This documentation is needed to show that soluble forms of uranium were never present at the facility.**

Response: BP Chemicals received, produced, used and shipped offsite materials containing only oxides of uranium. No fluorides of uranium or other soluble forms of uranium were possessed by BP Chemicals or its predecessor companies at the Lima site at any time. The uranium oxide based catalyst, CAT-21 was used at Lima for the manufacture of acrylonitrile

during the period from 1965 to 1971. Prior to March 1967 the catalyst used at the Lima site was manufactured offsite by Chemetron and other manufacturers and shipped to Lima for use. In March 1967 BP Chemicals (Vistron Corporation at the time) placed a catalyst manufacturing facility in operation at Lima. From March 1967 until the acrylonitrile manufacturing process was converted to a non-radioactive catalyst in 1971 catalyst was manufactured at Lima. Attached as **Exhibit E** are the following documents which collectively demonstrate that the catalyst manufacturing process involved the use of uranium oxides only and not soluble forms of uranium:

- *Catalyst Plant Operating Manual*, dated March 1967.
- *Atomic Energy Commission Nuclear Material Transfer Reports* for the receipt of depleted uranium oxide  $U_3O_8$ .
- Sample of *Source Material Inventory Report* submitted to U.S. Atomic Energy Commission by Vistron Corporation.
- Sample of an internal audit of the Catalyst Plant.
- Set of notes regarding a 6/4/68 inspection of the Catalyst Plant by Mr. Loren Hueter of the U.S. Atomic Energy Commission.
- *Process Flow Sheet* for the Catalyst Manufacturing Process, Vistron Corporation Drawing # 3379-IY-1, Revision B, dated 12/30/69.

**Item 7. Confirm the basis of the BP Chemicals quality assurance and quality control plan for the project has been developed (to the extent appropriate) in consideration of the eighteen (18) elements contained in Appendix B.**

Response: A report is included as **Exhibit F** which describes how the BP Chemicals project quality assurance and quality control plan is consistent with the eighteen (18) quality assurance criteria listed in Title 10 Code of Federal Regulations, Part 50, Appendix B (10 CFR Part 50, Appendix B).

**Item 8. Provide a written site-wide decommissioning strategy to document the strategy presentation given at the meetings.**

Response: On March 3, 1993 BP Chemicals submitted a letter to NRC (to the attention of Mr. Sam Nalluswami) in which the site-wide strategy for decontamination and decommissioning of the Lima site was detailed. During our March 31 and April 1, 1994 meetings, an updated version of that strategy was presented to NRC. A written description of this updated strategy, entitled *Updated Site-Wide Decontamination and Decommissioning Strategy for BP Chemicals, Lima, Ohio, April 29, 1994* has been prepared and is included as **Exhibit G**.

**Item 9. Provide a complete set of all overhead visual aids used during the meetings.**

Response: The copies of visual aids utilized by BP Chemicals and its consulting engineers during the March 31 and April 1, 1994 meetings are provided in **Exhibit H**.

**Item 10.** Provide NRC with documentation of Ohio EPA approval of the project. Also provide NRC with copies of technical reports prepared for the Ohio EPA, including the following reports: *Stability of Slopes Report* and *Response Action Plan*

Response: The following technical reports prepared for Ohio EPA are included in **Exhibit K**. Also included in Exhibit I are the following key Ohio EPA approvals received to date.

#### TECHNICAL REPORTS SUBMITTED TO OHIO EPA

- *Stability Of Slopes Report*, dated 9/4/91
- *Erosion Control for Closure Cell Caps Report*, dated 9/18/91
- *Liner Compatibility Testing Report*, dated 3/6/92
- *Response Action Plan*, dated 4/20/92
- *V-1 and Celite Ponds Risk Assessment Plan*, dated 12/17/92
- *Decontamination Pad Removal and Clean-up Plan*, dated 5/7/93
- *Test Fill Work Plan*, dated 5/7/93
- *Laboratory Analysis Results, Background Soil Sampling Survey Report*, dated 7/6/93
- *Test Pad No. 1 Construction and Testing Report*, dated 1/26/94

#### OHIO EPA APPROVALS RECEIVED

- Approval to Treat Four Ponds as a Single Unit (non-applicability of LDR), dated 10/30/92
- Approval of Closure/Post-Closure Plan, dated 9/20/93
- Approval of the Project QA/QC Plan, dated 11/29/93
- Release of V-1 Pond for Construction, dated 11/29/93
- Approval to Dispose of Debris in Closure Cells, dated 3/14/94

**Item 11.** Provide NRC with Ohio EPA design criteria for the disposal cells, and citations of other similar applications and locations (especially in Ohio) where the subject design has been approved and successfully used.

Response: The Dames & Moore report attached as **Exhibit I** summarizes the regulatory basis for the design and cites other landfills where the design has been successfully utilized.

**Item 12.** On March 1, BP Chemicals submitted to NRC a tabulation of all radiological analyses of site groundwater samples in response to a February 16 request in conjunction with the NRC's review of the V-1 pond release report. Following the March 31/April 1 meeting, you asked that BP Chemicals provide NRC with a summary of the applicable state and federal water quality standards to demonstrate that the previously submitted analyses complied.

Response: The state regulations which set the maximum allowable concentrations for various radionuclides in community water systems in Ohio are the standards which are being used in evaluation of groundwater at the site. The regulations are found in Chapter 3745-81-15 and 3745-81-16 of the State of Ohio Code of Regulations which are attached as **Exhibit J**.

**Item 13.** Initiate the inclusion of Ohio Department of Health on the copy list of all correspondence with NRC. ODH copies should be directed to the attention of Mr. Robert Owen.

Response: Henceforth BP Chemicals will copy Mr. Robert Owen of the Ohio Department of Health on all future correspondence. We will also provide ODH with a copy of the latest

revision of the license amendment application as soon as the corrections detailed in this correspondence can be incorporated in the document.

**Item 14. Provide the address and contact person for the Allen County Environmental Citizens Advisory Committee (ECAC) so that the NRC can copy the ECAC on correspondence for the purpose of keeping the local community informed of project developments.**

Response: The Environmental Citizens Advisory Committee (ECAC) is chaired by the Allen County Health Commissioner, Mr. David L. Rosebrock, MPH. BP Chemicals suggests copying the ECAC by sending correspondence to Mr. Rosebrock at the following address:

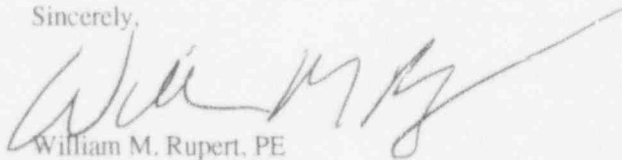
Environmental Citizens Action Committee  
c/o Mr. David L. Rosebrock, MPH  
Health Commissioner  
Combined Health District  
P.O. Box 1503  
Lima, Ohio 45802

Mr. Rosebrock's telephone number is (419) 228-4457.

As we indicated during our meetings, BP Chemicals is concerned about the timing of NRC approval of the license amendment application. We are interested in making full use of the 1994 construction season which has already begun and which will continue through the end of November. We appreciate the prompt approval of the V-1 pond release report and hope that the NRC can continue to dedicate the resources needed to promptly review and approve our license amendment application.

If you have any questions regarding the enclosed information, please give me a call as soon as possible at (419) 226-1299.

Sincerely,



William M. Rupert, PE  
Technical Specialist - Environmental

WMR/wmr

cc: Ken Lambert, USNRC Region III  
Robert Owen, Ohio Department of Health  
Jim Ottarson, Ohio EPA, NWDO