

Mr. William M. Rupert, PE  
Project Manager  
BP Chemicals, Inc.  
Ft. Amanda Road  
P.O. Box 628  
Lima, Ohio 45802-0628

Dear Mr. Rupert:

If you have any questions, please contact me on 301-415-6694.

/S/

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

**NRC FILE CENTER COPY**

MSS r/f PUBLIC  
BP Chemicals dist. list

Path &amp; File Name: S:\DWM\LLDP\SMN\BPSLUSAM.SMN

OFC	LLDP	LLDP	LLDP	LLDP	LLDP	RTU
NAME	SNalluswami	Mhood	DFauver	Med	JHickey	EKILBER
DATE	2/10/97	2/7/97	2/10/97	2/10/97	2/10/97	2-11-97

ACNW: YES ☐ NO ☐ Category: Proprietary ☐ or CF Only ☐  
 IG : YES ☐ NO ☐  
 LSS : YES ☐ NO ☐ Delete file after distribution: Yes ☐ No ☐

9702130182 970211  
PDR ADOCK 04007604  
C PDR



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 11, 1997

Mr. William M. Rupert, PE  
Project Manager  
BP Chemicals, Inc.  
Ft. Amanda Road  
P.O. Box 628  
Lima, Ohio 45802-0628

SUBJECT: REQUEST FOR LICENSE AMENDMENT TO REVISE SECTION 11 OF THE PROJECT  
QA/QC PLAN, ENTITLED PROCEDURE FOR VERIFICATION OF ATTAINMENT OF  
THE OPTION 2 CRITERION FOR STABILIZED SLUDGE RADIOACTIVITY LEVELS

Dear Mr. Rupert:

The U.S. Nuclear Regulatory Commission staff has reviewed your request dated November 25, 1996, for a license amendment to revise Section 11: Procedure for Verification of Attainment of the Option 2 Criterion for Stabilized Sludge Radioactivity Levels, Revised 10/16/96. Based on the review, the staff generated the enclosed comments. Please provide your response to the enclosed comments within 30 days from the date of this letter.

If you have any questions, please contact me on 301-415-6694.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Nalluswami", is written over a horizontal line.

M. (Sam) Nalluswami, Project Manager  
Low-Level Waste and Decommissioning  
Projects Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

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

Enclosure: As stated

NRC Comments on BP Chemicals "Request for License to Resolve Section 11 of The Project Quality Assurance/Quality Control Plan, Entitled Procedure for Verification of Attainment of The Option 2 Criterion for Stabilized Sludge Radioactivity Levels," November 25, 1996.

#### General Comments

1. Why was the survey plan revised?
2. The averaging method recommended in NRC's guidance document for final surveys, NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination," contains 3 criteria (Page 2.4 of NUREG/CR-5849): 1) the maximum concentration in an individual sample should not exceed 3 times the guideline level, 2) the average concentration in a 10 m X 10 m area should not exceed the guideline level, and 3) the concentration in an elevated area less than 100 m<sup>2</sup> in size should not exceed  $(100/A)^{0.5}$  times the guideline level. All 3 averaging criteria should be addressed in the submittal. Please discuss in detail the ALARA justification for each deviation from the NUREG/CR-5849 averaging criteria, considering the potential dose consequences as appropriate.

#### Specific Comments

3. Page 1, Paragraph 3

The maximum concentration criteria is recommended in NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination," not SECY 81-576. Please clarify.

4. Page 4, Table

What is the range of sample results for the Burn Pond, V-1, Deepwell, and Celite sludges?

5. Page 4, Paragraph 1

The characterization sampling does not meet the sample frequency requirements of NUREG/CR-5849. The bases for the selection of characterization sample locations and the representativeness of sample results was not provided. In particular, the anticipated distribution of the contamination in the ponds (based on process knowledge and the historical sampling record) and the probability of identifying significant volumes of contamination in excess of the guideline level was not discussed. The average and upper 95% confidence level alone are insufficient to make a statement regarding the distribution of the sampled population and the existence of "pockets" of elevated contamination that could result in significant dose above that projected using the average concentration alone.

Enclosure

5. Page 4, Paragraph 1 (continued)

What quality assurance/quality control documentation does BP have to support the validity of the characterization results?

Finally, the characterization results do not represent the concentration of the stabilized sludge to be placed into the disposal cell. To ensure that the most accurate data is available for NRC to make a final determination regarding public health and safety impact of the depleted uranium actually placed into the disposal cell, and for any possible future reevaluations of public health and safety impact of the disposed material because of new laws, regulations, scientific information, or renewed public concern, it is important that the actual concentrations of the material placed into the cell be determined and reported.

Without additional justification, the staff does not have sufficient bases for concluding that the characterization data demonstrates compliance with the 300 pCi/g limit for depleted uranium. Unless such justification is provided, the staff recommends that all stabilized sludge be sampled during the final survey.

6. Page 5, Homogeneity Demonstration

The homogeneity demonstration was removed from the current version of the survey plan. The degree of uniformity in the stabilized sludge is a critical element to consider during the survey design. If uniformity is not reasonably demonstrated, a higher frequency of composite sample results will require investigation, including the analysis of the individual samples comprising the composite and possibly collecting additional samples to demonstrate compliance with the  $(100/A)^{0.5}$  averaging criteria. Please provide the method for demonstrating the uniformity of the stabilized sludge.

7. Page 5, Paragraph 3

Will the number of samples,  $n$ , used in the student's  $t$  test be the number of composited samples or the total number of individual samples?

8. Page 6, Paragraph 3

Please provide additional information demonstrating that the samples collected from the staging piles will be representative of the entire pile volume. Will cores be collected over the entire depth of the each pile?

9. Page 6, Paragraph 4

If a thorough demonstration of homogeneity is not provided, an action level of  $(300 \text{ pCi/g} + 5)$  would likely be necessary to ensure that no individual sample exceeds 300 pCi/g. In other words, if a composite sample exceeds 60 pCi/g, each of the 5 individual samples comprising the composite may require analysis. Additional samples may also be necessary to demonstrate compliance with the  $(100/A)^{0.5}$  averaging criteria.

10. Page 7, Paragraph 3

What QC will be performed in addition to the 5-10% offsite samples? Will blanks and spikes be run and plotted on control charts? What is the acceptance criteria for QC sample results? Has a comprehensive quality assurance plan been developed?

11. Page 8, Paragraph 7

The use of the  $(100/A)^{0.5}$  as described is not clear and does not appear to be consistent with the technical assumptions underlying the formula. Please provide additional explanation of how compliance with the  $(100/A)^{0.5}$  formula will be demonstrated.

## Transmit Confirmation Report

No.	:	002	
Receiver	:	G3	
Transmitter	:	NRC/NMSS/DWM	
Date	:	Feb 12'97	9:16
Time	:	00'51	
Mode	:	Norm	
Pages	:	02	
Result	:	OK	



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

FAXED FROM  
THE  
DIVISION OF WASTE MANAGEMENT

(DWM/NMSS)

FAX NUMBER: (301) 415-5398

VERIFICATION: (301) 415-7445/7438

LOCAL: \_\_\_\_\_

LONG DISTANCE: \_\_\_\_\_

\*\*\*\*\*

1. JENNIFER WILLIAMS/B RUPERT FAX #: 1-419-226-1274  
LOCATION: \_\_\_\_\_ VERIFY: \_\_\_\_\_

2. \_\_\_\_\_ FAX #: \_\_\_\_\_  
LOCATION: \_\_\_\_\_ VERIFY: \_\_\_\_\_

HERE'S PAGE 3.

NUMBER OF PAGES 1 PLUS COVER SHEET

FROM: BETTY GARRETT IN S. NALLUSWAMI'S OFFICE

PHONE: 301-415-7441

MAIL STOP: \_\_\_\_\_



**From:** Edward Kulzer  
**To:** TWD2.TWP7(SMN)  
**Date:** 2/11/97 1:37pm  
**Subject:** JUNE 12, 92, LETTER -Reply

Sam,  
I have reviewed the letter and concur.  
Ed Kulzer

