[redacted]

September 20, 2005

Ms. Leah R. Morrell
Licensing Officer
BWX Technologies, Inc.
Nuclear Products Division
P.O. Box 785
Lynchburg, VA 24505-0785

SUBJECT: BWX TECHNOLOGIES, INC., APPROVAL OF FINAL STATUS SURVEY REPORT FOR INDUSTRIAL WASTE LANDFILL 1 (L31906)

Dear Ms. Morrell:

The Nuclear Regulatory Commission (NRC) staff has reviewed your application dated August 10, 2005, regarding the Final Status Survey Report (FSSR) for Industrial Waste Landfill (IWL) 1 as required by License Condition S-13. We have completed our review of the subject report and hereby approve your FSSR for IWL 1. Accordingly, the NRC plans to amend your license within the next six months to ensure that your license contains the revised Safety Condition S-13, which was agreed on per telephone conversation with L. Morrell on August 29, 2005, as follows:

S-13 The Final Status Survey Report (FSSR) for the Industrial Waste Landfill 1, submitted by application dated August 10, 2005, has been determined by the NRC staff to meet the requirements of 10 CFR 70.38 in that the landfill has been remediated in accordance with the decommissioning plan approved on November 21, 2003. At the time of license termination, however, the results of the FSSR may be re-assessed in order to include any dose from this landfill in the site dose assessment. BWXT shall also control licensed material which could migrate and impact the area and keep records of all work done in the area.

Enclosed is the Safety Evaluation Report and the Categorical Exclusion determination.

If you have any questions regarding this matter, please contact Billy Gleaves of my staff by phone at (301) 415-5848 or via e-mail to bcg@nrc.gov.

[redacted]

[redacted]

Sincerely,

/RA/

William C. Gleaves, Project Manager
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket 70-27
License SNM-42

Enclosure: Safety Evaluation Report

[redacted]

[redacted]

Sincerely,

/RA/

William C. Gleaves, Project Manager
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket 70-27
License SNM-42

Enclosure: Safety Evaluation Report

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DOCKET NO: 70-27

LICENSEE: BWX Technologies, Inc.
Nuclear Products Division
Lynchburg, Virginia

SUBJECT: SAFETY EVALUATION REPORT: SUBMITTAL DATED AUGUST 10, 2005, FINAL STATUS SURVEY REPORT FOR INDUSTRIAL WASTE LANDFILL 1

BACKGROUND

The Decommissioning Plan and Final Status Survey Plan (FSSP) for Industrial Waste Landfill (IWL) 1 was submitted and approved by NRC by license amendment 101 dated November 21, 2003. Safety Condition S-13, in the current license, requires that BWX Technologies, Inc. (BWXT), submit a FSSP by December 1, 2008.

DISCUSSION

Based on the historical use of the landfill, the predominate contaminant present in IWL 1 is soluable highly enriched uranium (HEU) compounds. The purpose of the FSSR for IWL 1 is to demonstrate that the levels of radioactive material contamination meets the NRC guidelines for unrestricted release under Option I of SECY-81-576 and the approved Final Status Survey Plan were met. Specific objectives of the survey were to demonstrate:

1. that the residual contamination in IWL 1 meets the criteria for release under Option 1 of the Branch Technical Position (BTP), "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," contained in NRC's SECY-81-576; and

2. the environmental impact of any contamination above background poses no significant risk to the environment or the general public.

Option 1 of the BTP gives a guideline value for HEU of 30 pCi/g of total uranium. The BTP allows areas to exceed the guideline value, provided they meet certain conditions. The result of the remediation of the IWL 1 indicated the following:

1. No tests revealed activity concentration levels of HEU above the guideline value. Sample results varied from natural background levels to 27pCi/g with the average net activity concentration level being 1.6 pCi/g in IWL 1, as a whole, and 2.1 pCi/g in Trenches 2 and 3 of IWL 1;

2. Although the predominate contaminant was found to be HEU, the quantity of fission product was insignificant;

3. With regard to environmental availability of the HEU, the uranium consisted of [redacted] soluable and [redacted] insoluable uranium compounds;

4. Data from groundwater monitoring performed since 1982 demonstrates no migration of contamination into the groundwater;

5. Exposure rates were measured on the remediated IWL 1 at 7 - 10 μR/hr, where background radiation exposure rates are typically 5-10 μR/hr. The measured rates were below twice the background exposures so no surface scans were required;

6. IWL 1 passed the NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination, Draft Report for Comment," Section 8.5.5, "comparison value" test, providing a 95% confidence level that the true mean activity levels meets the guideline;

7. BWXT's RESRAD (ver. 6.22) computer program was used to calculate a dose assessment for the material remaining in IWL 1, using the resident farmer scenario and the PG-8-08 defaults with adjustments made for contaminated zone thickness, cover depth, and area. The RESRAD dose assessment resulted in a maximum calculated dose equivalent for IWL 1 of 0.4 mrem/yr. These doses meet the allowable 25 mrem/yr dose to members of the public as required by 10 CFR Part 20.1402;

8. BWXT meets Option 1 of the BTP and the objectives of the approved FSSP were met.

Based on the above review, the NRC staff recommends changes to the current safety condition S-13:

S-13 The Final Status Survey Report (FSSR) for the Industrial Waste Landfill 1, submitted by application dated August 10, 2005, has been determined by the NRC staff to meet the requirements of 10 CFR 70.38 in that the landfill has been remediated in accordance with the decommissioning plan approved on November 21, 2003. At the time of license termination, however, the results of the FSSR may be re-assessed in order to include any dose from this landfill in the site dose assessment. BWXT shall also control licensed material which could migrate and impact the area and keep records of all work done in the area.

ENVIRONMENTAL REVIEW

Based on information submitted by BWXT, the NRC staff has determined that the environmental impact of any radiation or contamination, if any, above background in IWL 1 will not adversely affect that public health and safety or the environment. The approval of the application to leave the landfill in place is considered a change in process operations, and meets the following requirements:

1. There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

2. There is no significant increase in individual or cumulative occupational radiation exposure.

3. There is no significant construction impact, and

4. There is no significant increase in the potential for, or consequences from, radiological accidents.

Accordingly, the NRC staff has determined that the criteria of 10 CFR 51.22(c)(11) for a categorical exclusion has been met. Therefore, neither an environmental assessment nor an environmental impact statement is warranted for this action.

CONCLUSION

Based on previous discussion, the NRC staff has determined: 1) special nuclear material has been properly disposed; 2) a reasonable effort has been made to eliminate residual radioactive contamination present at the site; and 3) a radiation survey has been performed which demonstrates that the landfill is suitable for release in accordance with the criteria for decommissioning in 10 CFR Part 20, Subpart E. Therefore, the NRC staff concludes that the FSSR for IWL 1 is acceptable and approval of the revised Safety Condition S-13 is warranted.

The Region II inspection staff has no objection to this proposed action.

PRINCIPAL CONTRIBUTOR

Billy Gleaves