



STATE OF WASHINGTON
 DEPARTMENT OF ECOLOGY
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June 6, 2008

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EDMC

Ms. Shirley J. Olinger, Manager
 Office of River Protection
 United States Department of Energy
 P.O. Box 450, MSIN: H6-60
 Richland, Washington 99352

Mr. William S. Elkins, Project Director
 Bechtel National, Inc.
 2435 Stevens Center Place, MSIN: H4-02
 Richland, Washington 99354

Re: Approval of Waste Treatment and Immobilization Plant (WTP) Demonstration Tests of
 Melter Offgas Treatment Systems at a Single Operating Condition

References:

1. April 15, 2008, CCN: 175992, WTP Melters Single Test Condition Meeting Minutes
2. July 11, 2006, CCN: 137181, White Paper on the Justification for Hanford Tank Waste and Immobilization Plant (WTP) Melter Testing at a Single Operating Condition
3. February 11, 2008, CCN: 170006, Dangerous Waste Permit Integration Meeting Minutes

Dear Ms. Olinger and Mr. Elkins:

The Department of Ecology approves the request from the United States Department of Energy and Bechtel National, Inc. (Permittees) to allow demonstration testing of the low activity waste (LAW) and high level waste (HLW) melters and their associated offgas treatment systems. Ecology's approval is in accordance with permit conditions III.10.H.3, III.10.H.5.f, III.10.J.3, and III.10.J.5.f, at a single steady state operating condition for each melter. Permit operating conditions will be set for each melter after successful demonstration of compliance with offgas treatment permit requirements. The conditions will specify maximum waste feed rates, maximum bubbling rates, and operating temperatures for melter offgas treatment units based on those successfully tested.

The Permittees' presentation on Demonstration Testing at a Single Operating Condition (Reference 1) provided information relating emission rates and organic destruction and removal efficiency (DRE) to waste feed rates and bubbling rates. Reference 2, provided to Ecology to partially satisfy Action Item 13-1 in Reference 1, identified other operating parameters that are correlated with emission rates and DRE. Among those are operating temperatures of the submerged bed scrubbers, wet electrostatic precipitators, high-efficiency particulate air filters, and thermal catalytic oxidizers. Collectively, this information provided the basis for Ecology's approval of the single test condition and specification of permit operating conditions as described in the first paragraph.

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The Permittees stated that melter plenum temperature is dependent on waste feed rate, bubbling rate, feed composition, and transient conditions (e.g., unstable rate of cold cap formation and melt surface coverage) and therefore should not be considered a control parameter for purposes of establishing conditions most challenging for offgas treatment. Ecology agrees with that conclusion.

Additional planned presentation topics on demonstration testing for the WTP melters and their offgas treatment systems are available in Reference 3. Information provided in Reference 3 indicates the Permittees' intention to present justification for demonstration testing of a single HLW melter and its offgas treatment system. In previous discussions, the Permittees have proposed demonstration testing of only a single HLW melter and its associated offgas treatment system because each HLW melter has its own dedicated primary and secondary offgas treatment train. Ecology does not agree with that approach. A single secondary offgas treatment train serves both LAW melters. Therefore, the single operating condition test for the LAW melter offgas treatment system will require both melters operating.

Ecology requests the composition of the waste feed simulant and chemical spikes to be used during the LAW and HLW demonstration tests be added to the list of presentation topics in Reference 3. Justification as to why each simulant is considered bounding for purposes of melter offgas emissions is critical in our consideration of your proposed test feed materials.

If there are any questions, contact me at 509-372-7899 or Tracy Gao at 509-372-7901.

Sincerely,



Ed Fredenburg
Acting Tank Waste Disposal Project Specialist
Nuclear Waste Program

jc

cc: See next page

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cc electronic:

Dave Bartus, EPA
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Administrative Record: Waste Treatment Plant ✓
Environmental Portal
Hanford Operating Record General File
USDOE-ORP Correspondence Control

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