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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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May 6, 1991



Ms. E.A. Bracken, Director  
Environmental Division  
U.S. Department of Energy  
P.O. Box 550  
Richland, WA 99352

Re: Regulated Air Pollutants from HWVP Subject to BACT/BARCT Analysis

Dear Mr. Wisness:

This letter is sent in response to questions raised at a March 27, 1991, meeting between USDOE/WHC, Ecology and the Department of Health regarding the applicability of state and federal Clean Air Act requirements to emissions from the Hanford Waste Vitrification Plant (HWVP).

Ecology and Health were asked to identify those air pollutants which would be subject to "Best Available Control Technology / Best Available Radionuclide Technology" (BACT/BARCT) review, and whether USDOE/WHC must conduct its analysis of available control technology in accordance with the "Top Down" Best Available Control Technology Guidance Document for all such regulated pollutants.

The enclosure to this letter lists regulated pollutants which must be evaluated in the BACT analysis for HWVP if there is a potential to emit (maximum possible emissions before any air pollution control equipment) any regulated pollutant above its significance amount. In addition, all emissions of radionuclides are regulated pollutants and subject to "Top Down" BARCT analysis. According to the referenced guidance document "an applicant proposing the top control alternative need not provide cost and other detailed information in regard to other control options. In such cases the applicant should document that the control option chosen is, indeed, the top, and review for collateral environmental impacts."

A complete BACT/BARCT analysis requires listing all available control technologies and their expected efficiencies. If the most effective technology is eliminated from consideration the application must explain why. Reasons for eliminating a technology are:

1. Technical infeasibility with a detailed description including the data supporting your positions,
2. Economic factors, providing cost per person-rem, energy costs, and total and incremental equipment costs, and
3. Environmental and health impact.

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Mr. Steven H. Wisness  
May 6, 1991  
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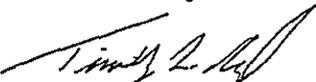
The next draft of the Hanford Waste Vitrification Plant Clean Air Act Permit Application (CAAPA) must include the following:

- A "Top Down" BACT/BARCT analysis for each regulated pollutant,
- An evaluation of gaseous Ruthenium-106 controls,
- An evaluation of Iodine-129 control technologies including activated carbon, caustic scrubbing, silver zeolite, silver mordenite, silver loaded silica gel, and other technologies identified by the applicant,
- An evaluation of all relevant combinations of available control technologies (i.e., I-129 emissions with and without NOx controls),
- Maximum potential ruthenium and technetium release rates from the Waste Hold Tank stack (revise table 4-4 in the April 1990 draft),
- Output from computer runs of dose calculations,
- Detection limits for the radionuclides emitted from the HWVP stacks,
- Information on the design of HWVP air monitoring systems.

As you may know, Ecology is preparing new regulations, Controls for New Sources of Toxic Air Pollutants, Chapter 173-460 WAC. These regulations are expected to be final in September 1991, and may require additional review of air emissions from the HWVP. For example, formic and oxalic acids are identified as a Class B toxic air pollutant and would therefore be subject to Best Available Control Technology for toxics (T-BACT) under the draft regulation. USDOE/WHC should be prepared to provide a T-BACT analysis for these and all other toxic air pollutants emitted from the HWVP. Ecology will work with USDOE/WHC staff to further determine the impact of these new regulations.

In order to eliminate future redundancies and potential contradictions in the regulation of airborne radioactivity, the Departments of Health and Ecology are currently preparing a Memorandum-of-Understanding (MOU) defining the agencies responsible for airborne pollutants. Until the MOU has been signed, the January 22, 1990 agreement letter from Terry Husseman and Eric Slagle stands for the HWVP. Any technical questions related to this letter should be addressed to Bob King (206/438-6727) and Kathy Fox-Williams (206/586-7021).

Sincerely,

  
Timothy L. Nord  
Hanford Project Manager  
WA State Department of Ecology

  
Al Conklin  
Head Air Emissions and Defense Waste  
WA State Department of Health

Enclosure

cc: Steve Wisness  
Cliff Clark  
John Bates  
Joe LaRue  
T.B. Veneziano (AR)  
Dan Duncan  
Teddy Le  
Dave Nylander

Regulated Pollutants from HWVP  
Subject to BACT Analysis

<u>Pollutant</u>	<u>Significance Threshold (tons per year)</u>
Ozone	40 (as volatile organic compounds)
Nitrogen oxides	40
Sulfur dioxide	40
Total suspended particulate matter	25
Particulate matter $\leq 10 \mu$ diameter	15
Carbon monoxide	100
Lead	0.6
Asbestos	0.007
Beryllium	0.0004
Mercury	0.1
Vinyl chloride	1
Fluorides	3
Sulfuric acid mist	7
Hydrogen sulfide	10
Reduced sulfur compounds	10
Benzene	0
Arsenic	0
Chlorofluorocarbons	0
Halons	0

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May 24, 1991

Julie Ring  
Westinghouse - Hanford Company  
P.O. Box 1970  
MSIN H4-57  
Richland, WA 99352

Re: Letter, T. L. Nord, Ecology, and A. Conklin, DOH, to E. A.  
Bracken, DOE-RL, Dated May 6, 1991

Dear Ms. Ring:

As we discussed at the HWVP meeting on May 22 regarding the phrase "maximum possible emissions before any air pollution control equipment" in the subject letter, I agreed with you on your comment by deleting the phrase from the subject letter. For your file, I am writing you this letter to confirm what I said at the meeting.

After the phrase is removed, the sentence shall be written as: The enclosure to this letter lists regulated pollutants which must be evaluated in the BACT analysis for HWVP if there is a potential to emit any regulated pollutant above its significance amount.

Should you have any questions regarding air pollution please call me at (206) 459-6727 or Teddy Le at (206) 459-6711.

Sincerely,

*Robert C. H. King*  
Robert C. H. King, P.E.  
Chemical Engineer  
Hanford Section

## CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
T. L. Nord, Ecology Al Conklin, DOH	E. A. Bracken, DOE	Incoming:9102442

Subject: REGULATED AIR POLLUTANTS FROM HWVP SUBJECT TO BACT/BARCT ANALYSIS

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