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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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July 31, 2007

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

Mr. Mark S. Spears, President  
CH2M Hill Hanford Group, Inc.  
P.O. Box 1500, MSIN: H6-63  
Richland, Washington 99352

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

Re: April 3, 2007, Inspection on the Completion Status of Hanford Federal Facility Agreement  
and Consent Order Milestones M-47-02 and M-47-04

Dear Ms. Olinger, Mr. Spears, and Mr. Elkins:

Thank you for the assistance from the United States Department of Energy (USDOE) - Office of River Protection (ORP), CH2M HILL Hanford Group, Inc. (CH2M), and Bechtel National, Inc. (BNI) personnel during the recent inspection of the completion status of M-47-02 and M-47-04 conducted by the Department of Ecology.

Due March 31, 2007, and June 30, 2007, these milestones required the completion of startup and turnover activities for transfer system upgrades that will allow the transfer of the first low activity and high activity waste feed to the Waste Treatment and Immobilization Plant (WTP). The purpose of this inspection was to verify that this work was completed.

In addition, we evaluated the construction of the transfer system upgrades being turned over. We noted the following concerns and have provided an action to be completed by either CH2M or BNI. Contingent on the action being completed within 30 days of receipt of this letter, we will consider the milestones complete.

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Concerns:

1. Changes to the design of the transfer system upgrades appear to be made to satisfy short term needs in response to funding constraints and equipment failures at the time of acceptance testing. These changes were not made due to modifications in WTP design or procedures. Changing from the use of motor actuated valves to manually operated valves was apparently done in response to motor actuator failures and the need to complete acceptance testing of the system before funding for Project W-211 ended. It does not appear that CH2M has thoroughly assessed this aspect of the transfer system design and how it can best support future WTP operations.
2. The number of valve problems encountered during these tank farm upgrades under Projects W-211 and W-314 raises serious questions about the adequacy of installation and overall reliability of equipment throughout the Tank Farms complex. The valve position indicator problems, high torque valve issues, and the decisions made by CH2M management to suspend funding for Project W-211 before the system was completed to design specifications, indicates a severe disregard for crucial details. If this disregard for details during Tank Farm equipment installations or modifications continues, Ecology is concerned that serious unintended consequences may result.
3. Problems with valve position indicators (VPI) were identified during the acceptance testing of the transfer system equipment rather than through inspections during installation. Three VPI were found to be installed incorrectly and no documentation could be found that independent inspections had been done to verify the VPI position. Ecology is concerned that significant errors such as these VPI misalignments were not caught during installation inspections. Fundamental errors such as these, which have the potential for significant consequences if not identified, should be identified during installation and not make it to the acceptance testing phase.
4. Interaction between CH2M contractor and BNI appear to be minimal during construction and acceptance testing of the transfer system. The interface control document process was maintained, however BNI did not independently inspect or survey any part of the transfer system to verify it was constructed correctly. Since the lines of this transfer system going to the WTP will have the important job of linking the treatment facility to tank farms, BNI should have had some form of independent physical participation in verifying the construction was adequate. If the transfer system is eventually found to have construction errors, there could be additional delays to WTP startup.

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Action:

1. Submit documentation showing how CH2M or BNI will track and complete an action to evaluate the need to replace manual valve actuators with motor operated valve actuators on the transfer system.

If there are any questions, contact me at 509-372-7929.

Sincerely,



Eric Van Mason  
Compliance Inspector  
Nuclear Waste Program

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cc: Julie Atwood, BNI  
Tim Miner, BNI  
Toni Faust, CH2M  
Moses Jaraysi, CH2M  
Phil Miller, CH2M  
Stuart Harris, CTUIR  
Gabriel Bohnee, NPT  
Russell Jim, YN  
Susan Leckband, HAB  
Ken Niles, ODOE

Administrative Record: M-47-02/04  
Environmental Portal M-47-04

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