

United States Government

Department of Energy  
Office of River Protection

# memorandum

DATE: **DEC 19 2012**  
REPLY TO: WTP:GEB 12-WTP-0399  
ATTN OF:  
SUBJECT: Stop Work Recommendation and Basis

TO: Dr. Stephen Chu, Secretary of Energy,  
U. S. Department of Energy

David Huizenga, Senior Advisor,  
U. S. Department of Energy, Environmental Management

Delmar Noyes, Deputy Federal Project Director,  
Waste Treatment and Immobilization Plant

Attached is a list of seven Priority Level 1 Findings, of which six are final and one is in a review status (the last was briefed to the U.S. Department of Energy, Waste Treatment and Immobilization Plant (DOE WTP) project management on 12/10/12, and is expected to be issued by the end of this calendar year). These findings remain unresolved with an undetermined path forward. Preparation of root cause analyses to date has been unconventional, with connections between the findings, the root causes, and the corrective actions unclear, and the subject of ongoing negotiation.

The Level 1 Findings are objective evidence of a condition of Indeterminate Quality. The Office of River Protection *Quality Assurance Program Description* includes among our basic beliefs: "Work suspension is appropriate when continued work would be unsafe, would be likely to be creating rework, and when safety or quality is indeterminate" (MGT-PM-PL-04, Rev 2).

Further evidence of Indeterminate Quality is contained within letter 12-QAT-0015 dated 11/15/12 which states "BNI is requested to evaluate all Quality procurements for the Waste Treatment and Immobilization Plant facilities initiated from February 22, 2007 (NQA-1-2000 was implemented by BNI under QAM-QA-06-001, Revision 0, on February 22, 2007), until present to ensure all applicable NQA-1 requirements were specified within BNI procurements."

This memorandum recommends, based upon a compelling body of objective evidence demonstrating Indeterminate Quality throughout the WTP facilities, that all activities affecting engineering design, nuclear safety, and construction and installation of all Structures, Systems and Components be stopped to avoid further nuclear safety compromises and substantial rework within WTP. In addition, a full 100% systematic extent of condition is warranted related to all the findings which should also be reviewed for fidelity by an independent agency (e.g. Defense Nuclear Facilities Safety Board, Nuclear Regulatory

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12-WTP-0399

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Commission, Institute of Nuclear Power Operations, Naval Reactors, Army Corps of Engineers, etc.).

A handwritten signature in black ink, appearing to read 'G. Brunson', with a long horizontal flourish extending to the right.

Gary E. Brunson  
Director, WTP Engineering Division  
Waste Treatment and Immobilization Plant

Attachment

cc w/ attach:  
Bill Hamel, DOE  
Kevin Smith, DOE  
Richard Lagdon, HQ  
Glenn Podonsky, HQ  
Steven Stokes, DNFSB

## **Condition of Indeterminate Quality**

### **Priority Level 1 Findings and Quality Assurance Letter**

#### **11-WTP-357, WTP Vessels Material Selection, October 14, 2011.**

Finding S-11-WED-RPPWTP-026-F02; Priority Level 1: A total of ten (10) WTP process vessels were found to have anticipated, maximum operating temperatures in excess of the corrosion related limiting temperature identified in corrosion literature for the selected materials of construction.

#### **12-NSD-0010, Black Cell Discharge Nozzle, Pipe, and Vessel Erosion Allowances to Support the Documented Safety Analysis, March 19, 2012.**

Finding S-12-NSD-RPPWTP-001-F01, Priority Level 1: Overarching programmatic non-compliance finding based on major Quality Assurance Manual (QAM) non-compliances with respect to BNI QAM, Design Control, and Test Controls requirements.

Finding S-12-NSD-RPPWTP-001-F02, Priority Level 1: BNI presumed the materials selection process utilized design inputs were conservative; however, during material confirmation, data provided by DEL was determined not conservative because it did not account for major changes in PTF processing raised by DOE's Review of Design Oversight of Black Cell Adequacy, 'a Blue Ribbon Panel Review, and a recent DOE surveillance.

#### **12-WTP-0111, Design and Safety Margin Management and Cumulative Management Performance Concerns, March 20, 2012.**

Finding S-12-WED-RPPWTP-012-F01, Priority Level 1: - Contrary to the requirements of DOE Order 413.3A. BNI did not establish a margin management strategy/program that establishes and maintains design margins, implemented through the Project Execution and Risk Management Plans. Contrary to the commitment made in the Declaration of Readiness CCN 039965. BNI did not manage design margin with a level of importance commensurate with a design-build project and with required documentation in calculations. Contrary to DOE Order 420.1B Chapter V. BNI did not include design and safety margin management in the WTP Configuration Management Plan, as integral to the System Engineer Program. Contrary to the

BNI Safety Requirements Document, BNI did not implement the required use of conservative design margins and for establishing and verifying adequate safety margin through the operating life. This adverse condition is a Priority Level 1 finding because it is a systemic breakdown that has impact on quality, worker health or safety, the public, the environment, facility operations, and regulatory compliance.

Finding S-12-WED-RPPWTP-012-F02, Priority Level 1: Several recent DOE oversight activities have resulted in the identification of significant performance issues. These issues, combined with a number of less important, but still representative, examples of less than adequate performance, indicates a systemic integrated management performance concern.

**12-WTP-0217 Vendor Design Submittals, July 16, 2012.**

Finding A-12-WED-RPPWTP-04-F05, Priority Level 1: Twenty vendor related procurement oversight findings, described in assessment report S-12-RPPWTP-004, demonstrate a lack of compliance with contract requirements and collectively are considered a Procurement Related Management Concern.

**S-12-WED-RPPWTP-031, (Draft in Process), Calculations – Focus on Assumptions, December 2012.**

Finding S-12-WED-RPPWTP-031-F01a through -F01ai, Priority Level 1: Thirty six examples from twenty seven calculations did not comply with quality assurance requirements for correct selection of design inputs, or for providing appropriate technical justification within the calculation.

Finding S-12-WED-RPPWTP-031-F07: The set of six findings above from a small sampling of calculation content is a cumulative indication of a systemic breakdown in quality.

**12-QAT-0015, ORP letter from Ronnie L. Dawson, ORP to R. W. Bradford, BNI, "American Society of Mechanical Engineers (ASME) NQA-1 Technical Interpretation Record Number 10-1365," dated November 15, 2012**

"...it is insufficient to only apply Section 100 of NQA-1 Parts I and II and expect results equivalent to specifying all of NQA-1, Parts I and II. BNI's Contract states in Standard 7, Section (3) Paragraphs (ii), (B) "The Contractor shall implement the 'National Consensus Standard' ASME NQA-1-2000, Part I and Part II..."