



**Department of Energy**  
Carlsbad Field Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221  
**SEP 25 2008**



Mr. James Bearzi, Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 E. Rodeo Park Dr. Bldg. 1  
Santa Fe, NM 87505-6303

**Subject: Completion of Repair of the Fire Water Supply Line and Installation of a New Post Indicator Valve**

Dear Mr. Bearzi:

The purpose of this letter is to transmit to your office a New Mexico registered professional engineer (PE) certification that the facility has been modified in compliance with the WIPP Hazardous Waste Facility Permit (Permit).

In a letter dated June 30, 2008, the Hazardous Waste Bureau was informed of the plans to install a new Post Indicator Valve in the fire water supply line, repair the damaged line, and tie this line into the Fire Suppression System via a penetration through the wall of the southwest corner of the Waste Handling Building. This notification of a planned physical alteration to the permitted facility was made in accordance with Permit Condition I.E.11.a. These alterations are now complete. In accordance with Hazardous Waste Facility Permit Module I.E.11.b, we have enclosed a certification by a New Mexico registered PE that the facility has been modified in accordance with the Permit.

We certify under penalty of law that this document and all enclosures were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Please feel free to contact Mr. H. L. (Jody) Plum at (575) 234-7462, if you have any questions regarding this documentation transmittal.

Sincerely,

*David C. Moody*  
David C. Moody, Manager  
Carlsbad Field Office

*M. F. Sharif*  
M. F. Sharif, General Manager  
Washington TRU Solutions, LLC

Enclosure



SEP 25 2008

James Bearzi

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cc: w/enclosure

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*John B. Grapner, P.E.*

September 23, 2008

*Renald E. Vintmann, P.E.*

*Michael E. Desier, P.E.*

*William D. Herbst, P.E.*

Mr. Curtis Chester  
IWHE Manager  
Washington TRU Solutions, LLC  
PO Box 2078  
Carlsbad, NM 88221

*Abbas Shaban, P.E.*

*Steven O'Brien, P.E.*

*John F. Heck IV, P.E.*

**Subject: Professional Engineer Statement of Compliance of the Facility Modification – CH Bay Fire Water Supply Restoration, installed September 2008.**

*Richard J. Raif, P.E.*

*Scott R. Arwater, P.E.*

Dear Mr. Chester:

*John M. Montagna, P.E.*

1. Introduction

- 1.1 This letter states that the CH Bay Fire Water Supply Restoration has been constructed and functionally tested in a manner such that it can be operated in compliance with the conditions of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit revised March 25, 2008. This action is to comply with Permit Condition I.E.11. *Reporting Requirements*, of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit. Permit Condition "I.E.11.b.i," which states: "the Permittees have submitted to the Secretary, by certified mail or hand delivery, a letter signed by the Permittees and a New Mexico registered professional engineer stating that the facility has been constructed or modified in compliance with this Permit".

The following documents were reviewed:

1. Waste Isolation Pilot Plant Hazardous Waste Facility Permit revised March 25, 2008.
2. DOE/WIPP-95-2065, WIPP CH DSA, Rev 10, with page changes
3. DOE/WIPP-95-2125, WIPP CH TSR, Rev. 10 with page changes CH with page change 11-16-2007;

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4. DOE/WIPP 06-3174, WIPP RH DSA, Rev. 0, with page changes through 8-28-2007; DOE/WIPP 06-3178,
5. DOE/WIPP 06-3178, WIPP RH TSR Rev. 0 with page changes through 8-28-2007
6. WTS Quality Assurance Plan, WP 13-1, Rev. 27
7. Applicable System Design Descriptions
8. NFPA 13, Standard for the Installation of Sprinkler Systems
9. NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances
10. Engineering Change Order, ECO 12034
11. Work Order, WO 0804564M
12. DOE/WIPP-95-2065, REV. 10 - Page change 2008-004, WIPP CH DSA
13. DOE/WIPP-06-3174, REV. 0 - Page Change 2008-004, WIPP RH DSA

In addition to the document reviews, a site visit was conducted on September 22, 2008 to interview the WTS subject matter experts and inspect physical CH Bay Fire Water Supply Restoration facility modifications.

The fire water supply restoration design was documented to be adequate by hydraulic calculations included in the design analysis documentation. Hydraulic calculations indicated the restoration as designed would supply more than the required flow at design pressure and more than the required pressure at design flow rate thus providing the technical basis that adequate flow and pressure could be supplied in the configuration as designed and installed. A wall penetration was specified and installed to provide building component protection equal to the existing wall where the pipe was routed into the Waste Handling Building (WHB) from the outside.

There was no change to the fire sprinkler system riser located in the CH Bay portion of the WHB where the work was performed. There was no change to the fire water supply extension installed in June, 2008. The fire water supply restoration modification replaced the ductile iron supply entering the south side of the CH portion of the WHB with PVC piping using an above grade building penetration. The fire water supply restoration modification will allow the fire water supply loop south of the CH portion of the WHB to serve the CH portion of the WHB (including the Waste Hoist Tower) and the TRUPACT Maintenance Facility building. Flow and pressure tests conducted via PM 000054, PM 000055, and PM 000056 validated that the system performs as designed and installed.

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The integrity and adequacy of the fire protection system utilizing the fire water supply restoration has been verified by system testing. The fire water supply restoration modification was hydrostatically tested to verify system integrity per WO 0804564M. Testing was performed per the appropriate sections and requirements of NFPA 13 and 24. Performance requirements were determined by applicable sections of NFPA 13.

Configuration Management aspects of the installed system and the design process are recorded through ECO 12034 (including 1 addendum).

## 2. Identification of the process and facilities being confirmed as compliant.

2.1 The Systems, Structures, and Components (SSC's) being confirmed as compliant are those fire water supply modifications required to replace the fire water supply line from the 10 inch fire water supply loop south of the CH portion of the WHB to the fire water supply riser in the south side of the CH portion of the WHB. The restoration includes replacement of PIV-18, PIV-19, V-013, and FH-013, and installation of new supply loop isolation valve PIV-38. It is comprised of the refurbished valve stand including valves, hydrant, tees and restraints. Additionally the restoration includes buried PVC piping from PIV-19 to an elbow and riser outside of the south WHB wall that brings the line above grade. Once above grade, the supply line is brought into the WHB through a wall penetration and is connected to the "tee" installed below the south sprinkler system riser. The new valves, hydrant, tees, piping, pipe restraints and wall penetration were inspected.

## 3. General Description of Confirmation Process

3.1 The work associated with the construction and functional testing of the CH Fire Water Supply Restoration was performed using the appropriate WIPP procedures and processes. The installation was performed by a NICET Level IV New Mexico licensed installation contractor. These ensured that work was performed in a safe and effective manner and that an appropriate quality assurance level was maintained. Applicable documentation, work packages and test results, are maintained according to a WIPP Records Inventory and Disposition Schedule, are available for inspection, and are included as part of this certification by reference.

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3.2 A review and assessment of each specific criterion was performed with a knowledgeable individual cognizant of the item, its configuration, and required performance. Applicable criteria are identified below.

3.2.1 Configuration Management of Design

3.2.1.1 ECO 12034

3.2.2 Work Control

3.2.2.1 WO 0804564

3.2.2.2 PM 000054, Rev 2; PM 000055, Rev 3; and PM 000056,  
Rev 2

3.2.3 Water For Fire Control

3.2.3.1 NFPA 13

3.2.3.2 NFPA 24

3.2.4 Building Wall Penetrations

3.2.4.1 SDD CF00-GC00 Plant Buildings, Facilities, and  
Miscellaneous Equipment

3.3 Physical Plant

3.3.1 Design: The design of the Fire Water Supply Restoration was performed per WIPP procedures utilizing the controls of WP 09, Engineering Conduct of Operations. The design was documented per the WIPP WP 09-CN3007 engineering change order procedure with an approved design provided by a State of New Mexico Registered Professional Engineer and reviewed and approved through the WIPP WP 09-CN3018 design review process. The design documentation included the appropriate regulatory and standards identification with hydraulic calculation to validate regulatory and standard conformance. Appropriate Quality Assurance documentation reviews were completed. The design was approved by a State of New Mexico Registered Fire Protection Engineer.

3.3.2 Construction: Materials used in construction received the proper quality assurance identification and receipt inspection through the site established procurement process. Appropriate materials controls were provided through the site Quality Assurance and Warehouse inventory control procedures. The Fire Water Supply Restoration was installed per plans and specifications with appropriate controls through the established WIPP Work Control process. The established work control process assured the proper industrial safety, nuclear safety and installation oversight flow down. The installation and testing was performed and certified by a NICET Level IV certified Fire Protection System Installation contractor.

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- 3.3.3 Functionally Testing: The completed installation was tested to assure proper system integrity and operation. The system was successfully hydrostatically tested to assure system integrity. Proper operation was verified through established procedures used to prove adequate pressure and flows are available to building sprinkler risers. The procedures used to prove proper system operation with the installed modification were PM 000054, PM 000055, PM 000056.
- 3.3.4 As-Built Documentation: The installation was reviewed and compared with the design documentation; the current physical facilities are documented using appropriate WIPP policies and procedures (i.e. WP 09-CN3007).
- 3.3.5 Inspection: The inspection requirements for Fire Sprinkler System indicated in the Permit Attachment D have been implemented.
- 3.3.6 Training: While familiarity with new features of the fire water supply restoration (i.e., new PIV-38 and above ground building penetration) will need to be disseminated to Facility Operations personnel, no permit related training requirements will have to be modified. PM 000055 was required to be modified to include the identification of the new fire water supply loop isolation valve included in the fire water supply restoration. DSA references to fire water supply isolation valve line-up to provide fire water to the CH portion of the waste handling building sprinkler risers were revised. Designations for proper alignment for primary and alternate fire water supply were identified. These modifications were required to identify the new fire water supply loop isolation valve and allow an alternate fire water supply alignment.

#### 4. System Inspection and Certification

- 4.1 The tests performed in the installation WO 0804564 were reviewed. The tests included were:
  - 4.1.1 Certified Design by State of New Mexico Registered Structural Engineer and State of New Mexico Registered Fire Protection Engineer
  - 4.1.2 Physical walkdown of installed system.
  - 4.1.3 NICET Level IV Installer Certification
  - 4.1.4 Hydrostatic testing of modified and new piping.

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4.1.5 Pressure testing of completed system.

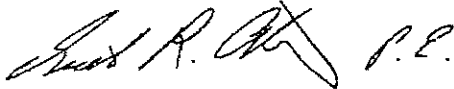
4.1.6 Flow testing of completed system. This test includes testing of the fire protection system alarm response and reporting.

#### 5. Statement of Confirmation

I confirm under penalty of law that this statement of confirmation was prepared under my supervision for Washington TRU Solutions LLC. Based on my personal observations and my inquiries of persons directly responsible, the information in this statement of confirmation is, to the best of my knowledge and belief, true, accurate, and complete.

Sincerely,

BRIDGERS & PAXTON CONSULTING ENGINEERS INC.



Scott R. Atwater P.E.  
Vice President



New Mexico Certificate No. 15900 Expires 31 December 2008.