

WP 12-FP0056

Revision 1

Operability Surveillance of WHB Fire Suppression System

Technical Procedure

EFFECTIVE DATE: 06/09/10

Robert Paslay
APPROVED FOR USE

CONTINUOUS USE

TABLE OF CONTENTS

INTRODUCTION..... 3

REFERENCES..... 3

PRECAUTIONS AND LIMITATIONS..... 4

PREREQUISITE ACTIONS 4

PERFORMANCE..... 5

1.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE RH AREA OF BUILDING 411..... 5

2.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE CH AREA OF BUILDING 411..... 6

3.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE OP&RR AREA OF BUILDING 411..... 7

4.0 VERIFICATION AND VALIDATION..... 8

Attachment 1 – WHB Operability Verification and Validation Sheet 9

INTRODUCTION ^{1, 2, 3, 4, 5}

This procedure provides the work instructions to verify proper operation of the fire system riser in the Remote-Handling (RH) Area of Building 411, Contact-Handled (CH) Area of Building 411, and Over Pack and Repair (OP&RR) Area of Building 411.

This procedure provides the instruction for the performance of the quarterly surveillance for **Surveillance Requirement (SR) SR 4.1.1.5 of Limiting Conditions of Operations (LCO) 3.1.1**.

Performance of this procedure generates the following record(s):

- Attachment 1, WHB Operability Verification and Validation Sheet

REFERENCES

BASELINE DOCUMENTS

- DOE-HANDBOOK 1062-96, DOE Fire Protection Handbook
- NFPA 25, Inspection, Testing and Maintenance of Water – Based Fire Protection System
- DOE/WIPP-07-3372, *Waste Isolation Pilot Plant Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plant Technical Safety Requirements*
- WP 10-2, Maintenance Operation Instruction Manual
- WP 10-WC3010, Maintenance PM/MWI controlled Document Processing
- WP 10-WC3011, Maintenance Process
- WP 12-FP.01, Fire Protection Program
- WP 12-HP3600, Radiological Work Permits
- WP 12-IS.01, Industrial Safety Program
- Various Manufacturer's Operation and Maintenance Manuals

REFERENCED DOCUMENTS

- WP 04-AD3001, Facility Mode Compliance

- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program

PRECAUTIONS AND LIMITATIONS

- The Technical Safety Requirements (TSRs) contains LCOs and Specific Administrative Controls (SACs) which provide specific preventative or mitigative limits and required actions for identified accident scenarios. Failure to comply with LCOs or SACs may constitute a violation and must be immediately reported to the Facility Shift Manager (FSM). The step affected by the LCO/SAC is followed by the LCO/SAC number in bold brackets (e.g., [**LCO 3.X.X**]).
- FSM must be contacted if a NO FLOW is detected during performance of this procedure.
- FSM must be contacted if a low residual pressure is detected during performance of this procedure.
- Any employee who has a concern for employee safety, the safety of the environment, or the quality of the activity has the responsibility and authority to suspend the performance of that activity.
- Work shall be stopped when instructions can not be performed, field conditions change, or additional job hazards are identified.
- All personnel affixing initials on Attachment 1, shall provide information listed in the Personnel Data Table of Attachment 1.
- Troubleshooting or other activities outside the scope of the procedure may require the initialization of a work order as directed by the Responsible Engineer or Zone Team Leader.
- The water pressure must NOT be reduced to < 105 psig during the performance of this procedure without entering **Standby Mode** or required actions of **LCO 3.1.1**.
- Reducing pressure below 120 psig may start electric fire pump.

PREREQUISITE ACTIONS

- 1.0 FSM or designee or Emergency Services Technician (EST) Coordinator, conduct a pre-job safety meeting.

SIGN-OFF

2.0 EST, notify the Central Monitoring Room Operator (CMRO) when testing begins.

SIGN-OFF EST

3.0 Personnel performing this work must review these work instructions prior to beginning action.

4.0 Record the work order number on the Attachment 1, if applicable.

PERFORMANCE

1.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE RH AREA OF BUILDING 411

1.1 Verify RH BAY static water pressure gauge, 411-PI-003-005, is between 105 and 175 psig. **[LCO 3.1.1] [SR 4.1.1.1]**

SIGN-OFF EST

1.2 Ensure riser control valve, FW-411-V-052, is OPEN (stem fully out).

NOTE

Either Step 1.3 or Step 1.6 can be completed first.

1.3 Perform Main Drain Flow Test with current gauges as follows.

1.3.1 OPEN main drain valve, FW-411-V-053, flow water until clear and gauges have stabilized.

1.3.2 CLOSE main drain valve, FW-411-V-053 and record gauge 411-PI-003-005 beginning static, flowing residual, and return static psi readings on Attachment 1.

SIGN-OFF EST

1.3.3 **IF** flowing residual pressure is NOT equal to or above 127 psig, **THEN** verify water supply control valves are OPEN and repeat test.

1.3.4 **IF** second test pressure is NOT equal to or above 127 psig, **THEN** generate an AR for cognizant engineer and FPE evaluation.

1.4 Reset Fire Alarm Control Panel (FACP).

1.5 Inspect main drain for leakage through valve.

- 1.6 OPEN Inspector Test Valve, FW-411-V-042, and verify full flow.
[LCO 3.1.1] [SR 4.1.1.5]

SIGN-OFF EST

- 1.7 CLOSE Inspector Test Valve FW-411-V-042 and reset FACP.
- 1.8 OPEN Inspector Test Valve, FW-411-V-044, and verify full flow.
[LCO 3.1.1] [SR 4.1.1.5]

SIGN-OFF EST

- 1.9 CLOSE Inspector Test Valve FW-411-V-044 and reset FACP.
- 1.10 Verify valves are in the operating position and that chains, locks, and seals are attached.
- 2.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE CH AREA OF BUILDING 411

- 2.1 Verify CH BAY static water pressure gauge, 411-PI-003-001, is between 105 and 175 psig. [LCO 3.1.1] [SR 4.1.1.1]

SIGN-OFF EST

- 2.2 Ensure riser control valve, FW-411-V-001, is OPEN (stem fully out).

NOTE

Either Step 2.3 or Step 2.6 can be completed first.

- 2.3 Perform Main Drain Flow Test with current gauges as follows.
- 2.3.1 OPEN main drain valve, FW-411-V-003, flow water until clear and gauges have stabilized.
- 2.3.2 CLOSE main drain valve, FW-411-V-003 and record gauge 411-PI-003-001 beginning static, flowing residual, and return static psi readings on Attachment 1.

SIGN-OFF EST

- 2.3.3 **IF** residual pressure is NOT equal to or above 132 psig,
THEN verify water supply control valves are OPEN and repeat test.
- 2.3.4 **IF** second test pressure is NOT equal to or above 132 psig,
THEN generate an AR for cognizant engineer and FPE evaluation.
- 2.4 Reset FACP.

- 2.5 Inspect main drain valve for leakage through valve.
- 2.6 OPEN Inspector Test Valve, FW-411-V-023, and verify full flow.
[LCO 3.1.1] [SR 4.1.1.5]

SIGN-OFF EST

- 2.7 CLOSE Inspector Test Valve FW-411-V-023 and reset FACP.
- 2.8 OPEN Inspector Test Valve, FW-412-V-002, and verify full flow.
[LCO 3.1.1] [SR 4.1.1.5]

SIGN-OFF EST

- 2.9 CLOSE Inspector Test Valve FW-412-V-002 and reset FACP.
 - 2.10 Verify valves are in the operating position and that chains, locks, and seals are attached.
- 3.0 PROPER OPERATION OF FIRE SYSTEM RISER IN THE OP&RR AREA OF BUILDING 411
- 3.1 Verify static water pressure gauge, 411-PI-003-003, is between 105 and 175 psig. [LCO 3.1.1] [SR 4.1.1.1]

SIGN-OFF EST

- 3.2 Ensure riser control valve, W-411-V-010, is OPEN (stem fully out).

NOTE

Either Step 3.3.1 or Step 3.6 can be completed first.

- 3.3 Perform Main Drain Flow Test with current gauges as follows.
 - 3.3.1 OPEN main drain valve, FW-411-V-012, flow water until clear and gauges have stabilized.
 - 3.3.2 CLOSE main drain valve, FW-411-V-012, and record gauge 411-PI-003-003 beginning static, flowing residual, and return static psi readings on Attachment 1.

SIGN-OFF EST

- 3.3.3 **IF** residual pressure is NOT equal or above 127 psig,
THEN verify water supply control valves are OPEN and repeat test.
- 3.3.4 **IF** second test pressure is NOT equal or above 127 psig,
THEN generate an AR for cognizant engineer and FPE evaluation.

- 3.4 Reset FACP.
- 3.5 Inspect main drain for leakage through valve.
- 3.6 OPEN Inspector Test Valve FW-411-V-062 and verify full flow.
[LCO 3.1.1] [SR 4.1.1.5]

SIGN-OFF EST

- 3.7 CLOSE Inspector Test Valve FW-411-V-062 and reset FACP.
- 3.8 Ensure valves are in the operating position and that chains, locks, and seals are attached.
- 3.9 Notify CMRO that sprinkler system operational testing is complete.

SIGN-OFF EST

- 3.10 Document operational testing on the Data Sheet.

4.0 VERIFICATION AND VALIDATION

- 4.1 EST, complete the Surveillance Data Sheet (EA04AD3001-SR5) and associated documentation for **LCO 3.1.1** as found in WP 04-AD3001 and forward to FSM.
- 4.2 FSM, review the completed Surveillance Data Sheet(s) for compliance with **LCO 3.1.1**.
- 4.3 Forward a copy of the completed Attachment 1 to the cognizant engineer and FPE.

