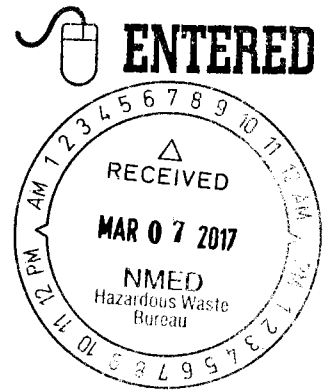




Department of Energy
 Carlsbad Field Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221
MAR 07 2017



Ms. Mary McDaniel, Manager
 Quality and Contractor Assurance
 Nuclear Waste Partnership LLC
 P.O. Box 2078
 Carlsbad, NM 88221-2078

Subject: Issuance of CBFO Surveillance S-17-01, NWP Fire Protection Program Activities

Dear Ms. McDaniel:

Enclosed is the report for Carlsbad Field Office (CBFO) Surveillance S-17-01, Nuclear Waste Partnership LLC (NWP) Fire Protection Program activities. The surveillance was performed January 31 – February 2, 2017 at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM. As described in detail in the report, the surveillance team concluded that the activities evaluated are effective and satisfactory for compliance with applicable upper-tier requirements and related WIPP procedures.

The team identified one condition adverse to quality regarding inspection records during the surveillance. Corrective Action Report 17-016 was issued under separate cover.

If you have any questions concerning the surveillance report, please contact me at (575) 234-7483.

Sincerely,

Martin P. Navarrete
 Senior Quality Assurance Specialist

Enclosure

cc: w/enclosure

E. Garza, CBFO	*ED	J. Kieling, NMED	ED
M. Brown, CBFO	ED	R. Maestas, NMED	ED
R. Elmore, CBFO	ED	D. Biswell, NMED	ED
D. Miehl, CBFO	ED	P. Martinez, CTAC	ED
M. Fineran, CBFO	ED	C. Castillo, CTAC	ED
M. Stapleton, CBFO	ED	M. Leroch, CTAC	ED
J. Britain, NWP	ED	P. Gomez, CTAC	ED
V. Ballew, NWP	ED	D. Harvill, CTAC	ED
S. Punchios, NWP	ED	G. White, CTAC	ED
A. Boyea, NWP	ED	WIPP Operating Record	
J. Walsh, EPA	ED	CBFO QA File	
J. Ellis, EPA	ED	CBFO M&RC	
T. Peake, EPA	ED	*ED denotes electronic distribution	



CBFO SURVEILLANCE REPORT

Surveillance Number: S-17-01 **Date of Surveillance:** January 31 - February 2, 2017

Surveillance Title: NWP Fire Protection

Organization: Nuclear Waste Partnership LLC (NWP)

Surveillance Team:

Martin P. Navarrete	Carlsbad Field Office (CBFO) Quality Assurance Representative
Paul C. Gomez	Surveillance Team Leader, CBFO Technical Assistance Contractor (CTAC)
Priscilla Yanez	Team Member, CTAC
Bobby Hunt	Team Member, CTAC
Kirk Kirkes	Team Member, CTAC

SURVEILLANCE SCOPE:

Surveillance S-17-01 was conducted to verify the implementation and effectiveness of the NWP Fire Protection Program at the Waste Isolation Pilot Plant (WIPP) on the surface and in the underground with respect to the requirements of the CBFO Quality Assurance (QA) Program. The surveillance team also evaluated and verified implementation and effectiveness of applicable NWP implementing procedures and follow-up to reports issued with findings from oversight agencies.

SURVEILLANCE RESULTS:

The surveillance team conducted interviews with responsible personnel, reviewed randomly selected records/forms to determine the degree to which the NWP Fire Protection activities are implemented, and evaluated the effectiveness of the process.

The surveillance areas are described below. One concern was identified during this surveillance, resulting in one Corrective Action Report (CAR) as described in detail in this report.

The surveillance team concluded that NWP Fire Protection Program activities and follow-up activities completed by NWP Fire Protection management are satisfactorily established for compliance with applicable upper-tier requirements and the degree of implementation is acceptable.

ACTIVITIES EVALUATED:

The surveillance team evaluated documentation (procedures and records) pertaining to NWP Fire Protection Program activities. The surveillance included interviews with

responsible personnel, review of documents/records, and observation of processes. Processes evaluated included, but were not limited to, the following:

- Fire protection equipment inspection, testing, maintenance activities and frequency
- Fire protection system operability and availability
- Ignition sources
- Storage and use of combustible, flammable, radioactive, and hazardous materials
- Fire Hazard Analysis (FHA) assessment programs
- Variance, exemptions, modification and equivalency program

Surface Operations

Fire Protection Equipment Inspection, Testing and Maintenance Activities and Frequency

The surveillance team evaluated the following implementing procedures:

- WP 12-FP0025, Revision 10, Sprinkler System Inspection and Testing
- WP 12-FP0026, Revision 11-FR1, Weekly Surveillance for Fire Water Supply and Distribution System
- WP 12-FP0030, Revision 3, Surface Ambulance and Medic Cart Inspection
- WP 12-FP0031, Revision 4, Fire Hose and Nozzle Inspection and Testing
- WP 12-FP0033, Revision 6-FR1, Inspection of Emergency Response Equipment
- WP 12-FP0034, Revision 4, Fire Hydrant and Isolation Valve Inspection
- WP 12-FP0060, Revision 10, Semi-Annual Inspection and Test of Automatic Fire Suppressions for Vehicles and Equipment
- WP 04-FP2201, Revision 3, Electric Fire Pump Emergency Start
- WP 04-FP2202, Revision 4, Diesel Fire Pump Emergency Start

The surveillance team verified the implementation of the NWP Quality Assurance Program as applied to the NWP Fire Protection Program in the area of surface fire protection, prevention, mitigation, and documentation of various reports generated by required periodic system/component tests and inspections. These were reviewed in order to establish the adequacy of fire protection activities conducted during and prior to the surveillance period. Interviews were conducted with fire protection engineering personnel to determine compliance with program requirements and understanding of plans and procedures. Physical tests and inspections, which were conducted during the surveillance period, were observed and evaluated for sufficient work control practices, adequate training of personnel and proper generation of required documents and records.

The responsibilities and roles of the Fire Engineer and Fire Department personnel are well established. The NWP President/Project Manager is responsible for budgeting, resources, direct role, and engineering. Fire Protection Authority jurisdiction is CBFO

granted to NWP and is carefully used. Responsibilities of fire protection include extinguisher requirements and monthly inspections of barricades. The fire protection engineer is responsible for the adherence to DOE-STD-1066, and this includes the responsibilities of the COG engineer and the fire protection engineer. The Fire Marshal is responsible for code enforcement. Line management/operations are responsible for daily interaction at the WIPP Site as necessary.

The team verified Building 452 Pre-Incident Plan date 09/22/15 regarding the amount of pressure in the water (hydrant) lines. The lines are tested at 20psi for the number of gallons required in a 2 hour flush. The amount of water available at 20psi was 750 gallons per minute in hydrant #9 meeting the required 6,037 gallons in 2 hours. Also verified were Computerized History and Maintenance Planning System (CHAMPS) reports for monthly emergency light and fire extinguisher inspections:

- Work Order 1623821 - #413 Emergency Lighting
- Work Order 1631072 - #240 Monthly Fire Extinguisher Inspection (RCRA)
- Work Order 1631073 - #534 Monthly Fire Extinguisher Inspection U/G (RCRA)

Based on the review, the surveillance team determined that the applicable requirements for the NWP Fire Protection Program activities are satisfactorily implemented and effective.

Fire Protection System Operability and Availability

The surveillance team verified the fire protection system operability and availability. The cognizant engineer tracks impairments, reports on false fire alarms, cares for the daily schedule, participates in the Plan of the Day, and provides a daily management briefing.

The surveillance team member to review implementation of the following procedures and associated attachments:

- WP 12-FP0036, Rev. 7, *Fire Extinguishers Monthly and Annual Inspection*

The surveillance team completed a walkthrough of the above ground facilities evaluating the fire suppression systems. Thirty fire extinguishers were observed and all were within compliance, properly tagged and checked. Buildings evaluated were: Operations Building, Engineering Building, Training Building, Truck Bay, Building 952, Building 950, Building 986, Building 918B, Building 953, Security Building including the Kitchen, and the Badging Area.

Extinguisher issues are currently being addressed as found in the DOE Operational Readiness Review (DORR). The outside agency issues have been properly addressed and are in continuous improvement through the use of WIPP Forms (such as WF 16-1055) for secondary mine escape ways as sited by the U.S. Department of Energy (DOE) Office of Enterprise and Assessments.

Based on the review, the surveillance team determined that the applicable requirements for the NWP Fire Protection Operability and Availability activities are satisfactorily implemented and effective.

Ignition Sources

The surveillance team reviewed WP 12-FP3002, *Hot Works Permits*. Interviews with personnel performing the work indicated sufficient knowledge of the procedure and familiarity with the associated requirements. No Hot Work permits have been issued recently.

Based on the review, the surveillance team determined that the applicable requirements for the NWP Fire Protection Ignition Sources activities are satisfactorily implemented and effective.

Storage and Use of Combustible, Flammable, Radioactive, and Hazardous Materials

The surveillance team verified that the Fire Marshal periodically inspects radioactive sources and performs Fire Risk Assessments and Accident Analysis Control.

Based on the review, the surveillance team determined that the applicable requirements for the NWP Fire Protection Storage and Use of Combustible, Flammable, Radioactive, and Hazardous Materials activities are satisfactorily implemented and effective.

Fire Hazard Analysis (FHA) Assessment Programs

The FHA Assessment programs follow DOE Standard (STD)-1066-2016 Parts 1, 2, and 3 for assessments. Part 1 meeting DOE Order 420.1C for frequency. Part 2 the qualifications of Fire Protection Engineer and personnel, and Part 3 the assessments are structured into Fire Protection Program Elements (Scheduled fiscal year (FY) including:

- Record Retention (OctFY19)
- Provisions for Staff and Training (FebFY18)
- Fire Reports and Investigations (NovFY19)
- Impairment Handling and Compensatory Measures (JanFY17)
- Construction, Demolition and Renovations (MarFY18)
- Control of Ignition Sources (MarFY17)
- Smoking Policy (JanFY19)
- Control of Flammable and Combustible Liquids and Gases (AprFY18)
- Combustible Control Program (AprFY17)
- Wildland Fire Management (MayFY17)
- Pre-Incident Fire Preplans (FebFY19)
- Provision of Facility Emergency Organization (MayFY18)
- Inspection, Testing and Maintenance of FP Design Features and Equipment (NovFY17)

- Facility Inspections (JanFY18)
- Fire Safety for Employees and Contractors (MarFY19)
- Fire Hazard Analysis Preparation and Maintenance (FebFY17)
- Emergency Response (AprFY19)
- Management of Changes to the Facility that Affect Fire Protection (OctFY18)
- Fire Protection Design and Operation of the Facility (JunFY17)
- Self-Assessments and QA (AugFY18)
- Equivalencies and Exemptions (MayFY19)

Each element is part of a three year rolling schedule of events to be reviewed by NWP FPP. This meets the requirements of DOE STD-1066-2016 and schedule requirements. Based on the review, the surveillance team determined that the applicable requirements for the NWP FHA Assessments Program activities are satisfactorily implemented and effective.

Variance, Exemptions, Modifications and Equivalency Program

The surveillance team verified variance, exemptions, modification, and equivalency program documents regarding fire protection:

- No variance or modification documents had been issued since the previous surveillance
- Exemption – AA:16:01193 Request for an Exemption to the USDOE O 420.1C, Facility Safety Requirement for an Automatic Fire Suppression System Throughout the WIPP Underground Facility, WIPP-EX-2015-0, Revision 1
- Exemption – Contract DE-EM0001971, NWP – DOE OEM Approval of CBFO Request for Exemption to DOE O 420.1C, *Facility Safety Requirement for an Automatic Fire Suppression System Throughout the WIPP Underground Facility*
- Equivalency – AA:16:01107 - *Request for Equivalency Involving the Use of Fire Screens for the Interim Ventilation System*
- Equivalency - Contract DE-EM0001971, Submittal of WIPP-EQ-2015-01 *Request for an Equivalency for NFPA 101, Life Safety Code, and Alternative Egress Provisions within the WIPP Underground*

Based on the review, the surveillance team determined that the applicable requirements for the NWP Variance, Exceptions, Modifications, and Equivalency Program activities are satisfactorily implemented and effective

Underground Operations

Fire Protection System Operability and Availability

On January 31, 2017, access was granted to the WIPP underground for the surveillance team member to review implementation of the following procedures and associated attachments:

- WP 12-FP0036, Rev. 7, *Fire Extinguishers Monthly and Annual Inspection*
- EA12FP0036-4-0, *Underground Carts Monthly Fire and Annual Extinguisher Inspection Report*
- EA12FP0036-5-0, *Underground Mobile Equipment Monthly and Annual Fire Extinguisher Inspection Report*
- EA12FP0036-7-0, *Underground HCA (Carts, Mobile, Stationary Equipment) Monthly and Annual Fire Extinguisher Inspection Report*
- EA12FP0036-10-0, *Underground HWFP Required Monthly and Annual Fire Extinguisher Inspection Report*
- WP 12-FP0035, Rev. 2, *U/G Miners First Aid Station Inspection*
- WP 12-FP0029, Rev. 4, *Self-Contained Breathing Apparatus (SCBA) Inspection*

The surveillance team member joined with a WIPP firefighter where they first looked at the SCBA's located in the Underground (U/G) rescue truck and discussed the inspection procedure. The team member and the firefighter began to travel the mine in search of several pieces of equipment that still required the January inspection. Among the equipment found was a diesel welder/generator (74-W-16) that did not have an extinguisher, a DOSCO mining machine, and an IMCO mining machine. Several pieces of equipment on the inspection report were not located during the search (Atlas Probe Hole Drill, Vacuum Trailer). A cart (74-C-289) used by mining operations personnel for fire watch purposes was found having five fire extinguishers that needed inspections including one missing seal to be replaced. The cart was not listed on the inspection report as being a fire watch cart. After lunch, the surveillance team member continued to inspect the south end of the mine for fire extinguishers and current inspection tags. A skid steer (74-H-049) was located in S2520 that was not listed on the U/G mobile equipment inspection report and the extinguisher was due for inspection.

On the morning of 02/01/17, the surveillance team member went back into the U/G to check on extinguishers due for inspection the previous month. An extinguisher (#411) was found at E140/S2520 drift without the inspection tag initialed and dated for January (HWFP required extinguisher). Next, the skid steer located the previous day in S2520 was observed to see if the inspection tag had been initialed for January, but it was not updated. A cart (74-C-288) was located at the miner's lunch room with an expired inspection on the extinguisher and was not listed on the Underground Carts Monthly Fire and Annual Extinguisher Inspection Report. The surveillance team member donned required personal protective equipment (PPE) and entered the high contaminated area with a radiological control (RADCON) technician to look at extinguisher inspections on

mobile equipment. A fire watch cart was found with five extinguishers of which two had issues; one had an expired inspection and the other did not have a security seal. The fire watch cart also was not listed on the Underground High Contamination Area (HCA) Monthly and Annual Fire Extinguisher Inspection Report (See CAR 17-016).

On the morning of 02/02/17 as a follow-up to further evaluate the U/G pertaining to CAR 17-016, the surveillance team member went into the U/G and met with a firefighter to inspect and update the tags on the #411 extinguisher, 74-H-049 skid steer, and 74-C-288 cart. The firefighter stated that within the next day they would get RADCON support and enter the HCA to update the extinguishers found needing inspection. Next, the surveillance team member traveled to the miners first aid stations (total of 6) to verify locations and that the seals were in place. Five of the six stations did not have seals in place on the latches. It was noted from the firefighters that U/G employees often remove the seals to obtain miscellaneous items from the cabinet.

The U.S. Department of Energy (DOE) Office of Enterprise and Assessments issues have been properly addressed and are in continuous improvement through the use of WIPP Forms (such as WF 16-1055) for secondary mine escape ways.

Based on the review, the surveillance team determined that the applicable requirements for the NWP Underground Fire Protection System Operability and Availability Program activities are satisfactorily implemented and effective

Training and Records:

The surveillance team verified training records for qualified Firefighters and Fire System Technicians. Firefighters and Fire System Technicians are included on the Read and Sign for Required Reading on inspection and test revised procedures. The Firefighters evaluated were trained to Authorization Card #: FF-01 which contains the Qualifications, Required Reading, and Training Requirements for the WIPP Fire Department Firefighter. This Authorization Card remains valid for two years from the date of completion. The Fire System Technician evaluated was trained to Qualification Card: FST-12-01 and is certified to meet the standards of the National Institute for Certification in Engineering Technologies, (NICET), Level II Inspection and Testing of Water-Based Systems and Level I Special Hazards Suppression Systems.

Training completed by Fire Protection Engineering utilizes a qualification card. Fire Fighter I training is verified on training cards, and the Fire Protection Engineer verifies training for Emergency Services/Technicians/Qualification Card Guide, Air Trailer TCOM-25, and Fire Department Firefighter (FF)-01. To ensure training is completed with minimal impact to the crew, training is split into four segments each month. Training for the month of February is Ladder Training and the next month is Ropes Refresher. All training functions of the fire department are maintained for the entire year.

Current training was verified on the firefighters in the underground.

Records were verified to be stored in a FireKing 1-hour fire rated locked file cabinet. The group maintains a working copy of Records Inventory and Disposition Schedule (RIDS). The RIDS maintained is for NWP/Emergency Management and Security Department (EMSD) dated 12/01/2016.

The surveillance team selected records to be examined for accuracy, completeness, and legibility: inspection sheets, test/surveillance documentation, and Surveillance Data Sheets. No concerns were identified in this area. The surveillance team concluded that the NWP Fire Protection Program was adequate in the areas surveyed. Implementing procedures are adequate and meet upper-tier requirements. There are a sufficient number of trained and qualified personnel to meet mission goals; the WIPP sites surface fire protection systems and components are being tested, inspected and maintained as required.

No issues were identified during this review. The surveillance team determined that the applicable requirements for the NWP Training and Records Program activities are satisfactorily implemented and effective.

Corrective Action Reports:

One condition adverse to quality (CAQ) was identified during the surveillance.

CAR 17-016

Diesel welder 74-W-16 did not have a fire extinguisher, nor a bracket for one to be mounted on, listed on EA12FP0036-5-0. Cart 74-C-289 (used as a fire watch cart) was not listed on EA12FP0036-4-0. Bobcat 74-H-049 located in S2520 is not listed on EA12FP0036-5-0, and the extinguisher expired 01/31/2017. Extinguisher #411 located at E140/S2520 expired 01/31/2017 (tag was not initialed for January) and is listed on EA12FP0036-10-0 (Underground HWFP Required Monthly and Annual Fire Extinguisher Inspection Report). Cart 74-C-288 is not listed on EA12FP0036-4-0 and extinguisher expired on 01/31/2017. Cart 74-C-220 located in the HCA (fire watch) is identified on EA12FP0036-4-0 and not listed on EA12FP0036-7-0 (underground HCA carts, mobile, stationary equipment monthly and annual fire extinguisher inspection report) and had two of the five extinguishers with (1) no tag and (2) expired tag.

Requirement: WP 12-FP0036, Rev. 7, step 5.1.2 states "Inspect portable fire extinguisher for the following criteria and circle sat or un-sat for each criteria on the applicable EA: Annual and Monthly Inspection Tags installed, signed, intact and legible with correct information". Step 5.1.4 states "Print initials in the appropriate month/year block on the monthly inspection tag."

Corrected During the Surveillance:

No CAQs were corrected during the surveillance.

Observations:

No Observations were identified during the surveillance.

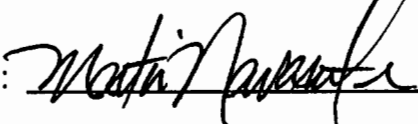
Recommendations:

No Recommendations were provided to NWP Management for consideration.

SURVEILLANCE CONCLUSION:

With the exception of the condition adverse to quality noted above, the surveillance team determined that the applicable requirements for the NWP Fire Protection Program activities that were reviewed are satisfactorily implemented and effective.

Surveillance Team Leader Signature:  Date: 3/6/2017
Paul C. Gomez

CBFO QA Director Approval:  Date: 3-7-17