

WP 04-AD.04
Revision 1

Project Execution Plan for the Fire Protection System

Cognizant Department: Operations

Approved by: Gene Valett



**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

Record of Revision

Revision Number	Date Issued	Description of Revision
0	6/15/10	Initial Issue
1	9/22/10	Revision to update schedule and financial information, and to add fire hydrant information.

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

TABLE OF CONTENTS

1.0	PROJECT OVERVIEW	1
2.0	CONTRACT OVERVIEW	1
3.0	PROJECT ORGANIZATION.....	1
4.0	PROJECT ADMINISTRATION	2
5.0	PROJECT BUDGET AND SCHEDULE	2
6.0	PROJECT RESOURCES	4
7.0	UNIQUE PROJECT CONSIDERATIONS.....	4
8.0	ENGINEERING AND DESIGN	4
9.0	PROCUREMENT AND MATERIAL MANAGEMENT	4
10.0	PROJECT CONTROLS.....	4
11.0	PROJECT QUALITY PLAN	5
12.0	CONSTRUCTION.....	5
13.0	COMMISSIONING AND START-UP	5
14.0	ENVIRONMENT, SAFETY, AND HEALTH.....	5
15.0	RISK MANAGEMENT	5
16.0	PROJECT CLOSEOUT	6
17.0	PROJECT PROCEDURES.....	6

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

1.0 PROJECT OVERVIEW

This Project Execution Plan (PXP) for the Fire Protection System has been prepared under the guidelines of Washington TRU Solutions LLC (WTS) Project Execution Management Program, in accordance with MP 1.42, WTS Project Execution Management Program; and WP 15-GM.01, WTS Project Execution Plans.

The site fire protection system was installed during construction of the Waste Isolation Pilot Project (WIPP) facility in the 1980s. The system consists of piping, pumps, and valves, in addition to alarming and reporting devices. All fire alarms are reported to the Central Monitoring Room (CMR) for appropriate actions. Part of the fire protection system is referenced in the Hazardous Waste Facility Permit (HWFP) and care must be taken not to make changes without proper authorization.

The purpose of this PXP is to demonstrate how WTS plans to maintain the fire protection system at the WIPP site. If needed, specific PXPs might be developed to address a certain phase of the overall project.

This PXP describes the scope, schedule, and budget to maintain the fire protection system. The project will be led by the WTS Site Operations and Disposal Department.

2.0 CONTRACT OVERVIEW

WTS is the management and operating contractor for the WIPP facility near Carlsbad, New Mexico. WTS will use WP 09-DC.01, Construction Management Plan, to perform contract overview as required.

3.0 PROJECT ORGANIZATION

The WTS Management Team will consist of the following members unless delegated in writing to the Project Manager.

Project Manager	R. Byrd
Project Engineer	B. Barnhart
Project Procurement	M. Friend
Project Construction Manager	R. Allen
Industrial Safety and Hygiene	H. Brown
Facility Operations Manager	D. Parrish
Maintenance Manager	L. Bostick
Quality Assurance Engineer	M. Davis
Fire Protection Engineer	S. Butler
Emergency Management	R. Paslay
Environmental Compliance	S. Jones

As the project matures, other individuals will be assigned as appropriate. Some, but not all, of the roles to be filled will be Quality Control, Person-In-Charge (PIC), and a Maintenance Engineer.

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

4.0 PROJECT ADMINISTRATION

This project will be managed in accordance with this PXP and detailed schedules as they become available.

The project manager will be responsible for project administration and is supported by personnel identified in Section 3.0.

The Project Manager will track the progress and a status will be provided to WTS senior staff.

5.0 PROJECT BUDGET AND SCHEDULE

5.1 Budget

The budget for the projected projects is best estimates only and will change as the projects begin. The costs of the projects are unburdened.

Pipe Replacement **\$450,000**

Pipe replacement from the WHB to the fire water lines is completed. The cost included excavation, valve/pipe replacement, concrete for thrust blocks, testing, backfill, resurfacing of the area and Professional Engineering services.

PIV Replacement **\$ 532,000**

The price was obtained by estimating PIV replacement to be approximately \$9K each. The price includes excavation, valve/pipe replacement, concrete for thrust blocks, testing, backfill, and resurfacing of the area for the 28 PIVs.

Pumphouse Valves **\$ 52,500**

The price estimate for the valve replacement was obtained from a local vendor and estimating installation costs from past projects. Replacement of the valves has completed. Final cost included material, testing and labor.

Electric Fire Pump Controller **\$ 20,000**

The price estimate for the controller was obtained from a local vendor by Engineering with installation and testing done by WTS.

Sprinkler Additions **\$ 20,000**

The addition of sprinklers under each contact-handled (CH) TRUPACT-II unloading dock (TRUDOCK), under the work platforms for the three main air lock doors entering the CH Area of the WHB and under the existing grating in the remote-handled (RH) Area within the WHB is complete. Cost included material, installation, and testing.

PIV Addition – Trailer 953 **\$ 20,000**

An additional PIV will be added to the fire protection system in order to isolate Trailer 953.

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

Trailer 953 Fire Protection Systems \$ 49,000

The fire protection system will be expanded to include Trailer 953. Trailer 953 is a new facility and a fire protection system is required. The installation will include sprinklers, header, and alarms. The cost estimate was obtained by requesting bids for installation. The addition of the Fire Protection System in Trailer 953 has been completed.

Fire Hydrant Isolation Valves – Site \$ 72,000

Through the site's Preventative Maintenance Program, four fire hydrants were identified as having problems closing properly. The cost estimate is based on replacing the post indicator valves, which are similar in nature.

5.2 Schedule

WTS uses a preventive maintenance (PM) program and engineering walk-downs to maintain equipment in good working order and schedules periodic outages on equipment. These programs identify any potential problems in order to keep the system in good working order. In addition, Facility Operations (Roving Watch) performs a walk-down of plant systems daily.

Any replacement or PMs performed on equipment will be identified on the Plant Integrated Schedule when they are scheduled to be worked. The schedule provides a best estimate of project duration and manpower requirements. Actual schedules will change over time during the course of the project as a reflection of efficiencies gained and problems encountered.

Pipe Replacement for the Waste Handling Building (WHB) – firewater supply pipe from the CH WHB to the main firewater loop was replaced in 2008. Prior to replacing the pipe, an alternate supply line was installed to the CH WHB. The firewater supply pipe to the RH WHB was replaced with a dual firewater supply arrangement in 2009.

Post Indicator Valve (PIV) Replacement – these valves will be replaced throughout the site. Work is scheduled to begin in December 2009 and be completed in December 2011. When the PIVs are replaced in front of the Pumphouse, a camera will be run into the pipe towards the Pumphouse from the PIVs to give a view of the interior of the pipe.

Pumphouse Valve Replacement – eight valves have been identified to be replaced in the Pumphouse. These valves have been identified through the PM process for replacement. The valves inside the Pumphouse were replaced in July 2010.

Electric Fire Pump Controller – the controller for pump 45-G-601 is in the process of being replaced in 2010. It was identified in an engineering walk-down as requiring replacement.

Sprinkler Additions – during 2009, additional sprinklers were added under each CH TRUDOCK, under the work platforms for the three main air lock doors entering the CH

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

Area of the WHB and under the existing grating in the RH Area within the WHB. The sprinklers were added to comply with the latest requirements of NFPA 13.

PIV Addition – Trailer 953 – this installation is scheduled by the end of 2011.

Trailer 953 Fire Protection System – with the addition of Trailer 953, a fire protection system is required. Installation was completed in June 2010.

Fire Hydrant Isolation Valve Replacement – replacement of the malfunctioning fire hydrants is scheduled to be completed in September 2011.

6.0 PROJECT RESOURCES

The primary resources for the WTS Project Team have been identified in Section 3.0. WTS will work on a level of effort basis to support this activity. Additional resources will be called upon from existing WTS organizations as the project warrants.

7.0 UNIQUE PROJECT CONSIDERATIONS

Unique project considerations are as follows:

- Maintaining the schedule
- Coordinating budget requirements
- Coordinating with existing operations
- Coordinating with appropriate regulators
- Equipment delivery
- HWFP modification

8.0 ENGINEERING AND DESIGN

The Project Manager will coordinate and use WIPP site resources for all engineering functions. WTS QA will provide inspection services as needed during the testing phase of any project.

9.0 PROCUREMENT AND MATERIAL MANAGEMENT

Purchasing is performed in accordance with site approved procedures. WTS operates in accordance with DOE-approved procedures implementing all aspects of procurement including sole source, source selection, and vendor qualification. WTS QA will provide inspection services as required in purchasing of the required parts.

10.0 PROJECT CONTROLS

This PXP addresses the scope, schedule and budget for this project. The PXP will be controlled to ensure revisions are processed and approved by appropriate parties.

The WTS Subcontract Technical Representative (STR) when required will track required submittals and costs.

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

11.0 PROJECT QUALITY PLAN

WTS will provide inspection services as needed in the purchasing and testing phase of the project as outlined in the detailed schedule. Applicable controls consistent with WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description, will apply.

12.0 CONSTRUCTION

When required, some projects will use the WIPP site approved contractor to perform the work. In some instances, WIPP maintenance will perform the work in accordance with site procedures. When a contractor is used, WTS will provide oversight activities to ensure work is performed per approved design documentation and in a safe manner.

13.0 COMMISSIONING AND START-UP

As part of the commissioning process on new equipment, a start-up test will be part of the work order to ensure operability of the equipment being installed. The start-up test will be written by the Engineering Department and witnessed by WTS QA and Start-Up Engineering at a minimum. On like-for-like change out, WTS QA will witness testing activities.

14.0 ENVIRONMENT, SAFETY, AND HEALTH

All work associated with the fire protection system will be performed in accordance with WP 15-GM.02, Worker Safety and Health Program Description, and applicable site requirements and procedures. Successful project completion requires implementation of safe work performance and quality into the management and performance of the project work.

15.0 RISK MANAGEMENT

WTS managers involved in project execution participate in the identification and assessment of program risks. They review program documents, evaluate lessons learned, and use brainstorming and their own experience to identify risks.

Project risks are identified in the following areas:

- Schedule – maintaining the schedule by not disrupting site specific operations such as Waste Handling Operations
- Funding – receiving appropriate funding to complete each phase of the PXP
- Technical – receiving the required help from Engineering and Operations to perform the required documentation and evaluations
- Programmatic – obtaining and using resources outside the control of the program manager

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

- Support – ensuring the required support is available when scheduled
- Safety – ensuring safety rules are strictly followed so no individual gets injured. During excavations, certain plant utilities might become a factor.
- Site-specific (including alternative site locations) – getting the appropriate approvals from certain regulators and disrupting site-specific operations such as transportation and waste handling.

Once risks are identified, WTS categorizes the identified risks by probability and severity (consequences) of each event.

After risks have been identified and categorized, a risk management approach and mitigation actions are developed for each high and medium risk. For low-risk elements not judged to require documented mitigation actions, WTS managers assure that they are controlled through the normal management functions and work processes. All risks and mitigation actions are identified in the CBFO *Risk Management Plan* (DOE/CBFO-03-3292).

In order to determine the effectiveness of the risks identified, the areas of medium and high risks are monitored and statused during monthly program meetings with the CBFO. In addition, periodic reassessments of programs are performed to determine if new areas of risk need to be identified and assessed.

Specific risks associated with the implementation of this PXP include the following:

- Low Risk – Some of the work may be delayed or altered significantly by emergent issues. WTS mitigation includes frequent review of project progress and schedule.
- Medium Risk – Coordinating budget requirements
- Low Risk – Equipment delivery

16.0 PROJECT CLOSEOUT

This PXP addresses the complete fire protection system. As individual projects become complete, they will be closed. This PXP will be considered closed when the last individual project is complete.

17.0 PROJECT PROCEDURES

This project will use existing site approved procedures in each aspect of this project.

- WP 02-AR3001, Unreviewed Safety Question Determination
- WP 02-EC3801, Environmental Compliance Review and NEPA Screening

**Project Execution Plan for the
Fire Protection System
WP 04-AD.04, Rev. 1**

- WP 04-AD3011, Equipment Lockout/Tagout
- WP 04-CO.01, Conduct of Operations series
- WP 09-CN3005, Graded Approach to Application of QA Controls
- WP 09-CN3007, Engineering and Design Document Preparation and Change Control
- WP 09-CN3023, Functional Classification Determination for Design
- WP 09-CN3025, Annual System Walkdown/Requalification
- WP 09-DC.01, Construction Management Program
- WP 09-SU.01, WIPP Start-Up Test Program
- WP 10-2, Maintenance Operations Instruction Manual
- WP 10-AD3007, Use and Control of Rigging Components
- WP 10-AD3018, Use and Control of Personal Fall Arrest Systems
- WP 10-WC3011, Maintenance Process
- WP 12-5, Waste Isolation Pilot Plant Radiation Safety
- WP 12-IS.01, Industrial Safety Program-Structure and Management
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description
- WP 15-GM.01, WTS Project Execution Plans
- WP 15-GM.04, American Recovery and Reinvestment Act Project Execution Plan
- WP 15-PC3041, Approval/Variation Request Processing
- WP 15-PC3609, Preparation of Purchase Requisitions
- WP 15-PS3002, WTS Controlled Document Processing
- PPE 002, WIPP Fall Protection Guide