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W-413, West Tank Farm Storage and Staging Facility Fire Hazards Analysis				ECN No.	
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2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) General Support Projects	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: W-413, Tank Farm Storage and Staging Facilities	6. Cog. Engr.: D. T. Lott	7. Purchase Order No.: N/A
8. Originator Remarks: N/A		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: 2715WA
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 12/7/94

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-W413-FHA-001		0	Fire Hazards Analysis	S	1	1	1

16. KEY					
Impact Level (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
1, 2, 3, or 4 (see MRP 5.43)		1. Approval	4. Review	1. Approved	4. Reviewed no/comment
		2. Release	5. Post-Review	2. Approved w/comment	5. Reviewed w/comment
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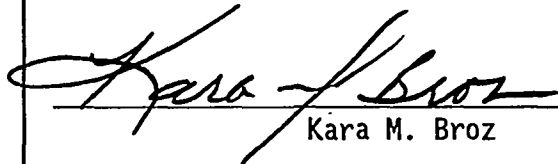
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Release Date: 12/14/94

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SUPPORTING DOCUMENT

1. Total Pages ^{12/14/94} 14/0

2. Title

Fire Hazards Analysis, West Tank Farm Storage and Staging Facility

3. Number

WHC-SD-W413-FHA-001

4. Rev No.

0

5. Key Words

Storage and staging facility, West Tank Farm Facility, Storage Facility

6. Author

Name: D. T. Lott

DT Lott
Signature

Organization/Charge Code 7F510/N3BA1

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KMB 12/14/94

7. Abstract

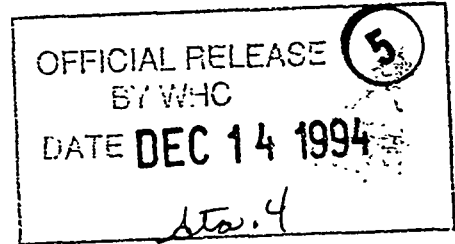
This document identifies the fire hazards of the proposed storage and staging buildings near the 272WA facility.

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9. Impact Level S

FIRE HAZARDS ANALYSIS

FOR

W-413, WEST AREA TANK FARM STORAGE AND STAGING FACILITY

WHC-SD-W413-FHA-001, REV. 0

Westinghouse Hanford Company

October 1994

Prepared by

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1.0 INTRODUCTION

In accordance with DOE Order 5480.7A, a Fire Hazards Analysis must be performed for all new facilities. The purpose of the analysis is to comprehensively assess the risk from fire within individual fire areas in relation to proposed fire protection so as to ascertain whether the fire protection objectives of the Order are met. The Order acknowledges a graded approach commensurate with the hazards involved.

Tank Farms Operations must store/stage material and equipment such as pipes, fittings, conduit, instrumentation and others related items until work packages are ready to work. Consumable materials, such as nut, bolts and welding rod, are also required to be stored for routine and emergency work. Connex boxes and open storage is currently used for much of the storage because of the limited space at and 272WA. Safety issues based on poor housekeeping and material deteriorating due to weather damage has resulted from this inadequate storage space. It has been determined that a storage building in close proximity to the Tank Farm work force would be cost effective. This facility is classified as a safety class 4 building.

2.0 SUMMARY AND CONCLUSIONS

The purpose of this document is to confirm that the location and operation of the West Area Tank Farm Storage and staging Facility is acceptable as proposed. Furthermore, that all applicable objectives of DOE Order 5480.7A are met.

3.0 DESCRIPTION OF CONSTRUCTION

The facility shall be 4,200 square feet and consist of a 60 foot wide by 40 foot long by 18 foot high pre-engineered insulated metal building with a 30 foot by 60 foot fenced and graveled area and a 30 foot by 25 foot covered area. This facility shall have (2)two 14' X 14' steel curtain over-head doors with electric operators, a insulated steel double door extending into the fenced area, (3)three insulated steel single doors and a caged area of chain link fencing material with a 5 foot sliding gate. The facility shall be constructed on a concrete foundation and consist of a metal roof. (See appendix A for a site location and layout.)

4.0 FIRE PROTECTION FEATURES

There are two fire hydrants available to this facility. Both are located within 300 feet and have adequate flow and pressure available for hose line protection. Portable fire extinguishers will be placed in

accordance with NFPA 10, Standard for Portable Fire Extinguishers. No automatic sprinklers or alarm systems are required for this facility.

5.0 DESCRIPTION OF FIRE HAZARDS

Electrically caused fires are considered the highest source for fire in the facility. Due to the contents and location of the facility, spread of a fire would be moderate and contained. Portable extinguishers will be appropriately placed throughout the facility in the event of a small fire. The Hanford Fire Department will respond should any fire situation occur. To reduce additional fire risk, the facility will contain no highly flammable or hazardous materials.

Range fires are a concern on the Hanford Site, however the physical location of this facility has adequate fire breaks which in conjunction with a well qualified fire department provides adequate protection.

6.0 PROTECTION OF ESSENTIAL SAFETY CLASS SYSTEMS

There are no essential safety class systems associated with this project.

7.0 LIFE SAFETY CONSIDERATIONS

For life safety design purposes, NFPA 101, Life Safety Code, Storage classification is being applied. The facility meets all requirements with the classification, such as, travel distances, and alarm requirements. Additionally, (2) two exits from the facility have been provided and fire response units are within five minutes of the site.

8.0 CRITICAL PROCESS EQUIPMENT

There is no critical process equipment associated with this project.

9.0 HIGH VALUE PROPERTY

There is no high value equipment (over \$1,000K). The facility will contain lower value consumable material and light duty equipment.

10.0 DAMAGE POTENTIAL

A Maximum Possible Fire Loss is the value of the property within a fire area, unless a fire hazard analysis demonstrates a lesser or greater loss potential. Due to the lack of an automatic fire suppression system, the Maximum Credible Fire Loss (MCFL) is equal to the Maximum Possible Fire Loss (MPFL). The material to be stored is estimated at \$500K. Total structural damage would be expected in the event of a fire. Replacement of the building is estimated at \$325K. The MPFL/MCFL

is estimated at \$825K. This meets the fire protection criteria of DOE 5480.7A.

11.0 FIRE DEPARTMENT/BRIGADE RESPONSE

The Hanford Fire Department is located approximately (1)one mile east of the 200 West area gate. The Hanford Fire Department provides an adequate response time of approximate 5 minutes to this area.

12.0 RECOVERY POTENTIAL

The anticipated recovery from the MCFL/MPFL, would include clean-up and approximately six months to procure and construct another facility.

13.0 POTENTIAL FOR TOXIC, BIOLOGICAL, AND/OR RADIATION INCIDENT DUE TO FIRE

There will be no toxic, biological, and/or radiation sources stored in the facility; therefore, potential for a toxicological or radiological incident due to fire in the building is unlikely.

14.0 EMERGENCY PLANNING

WHC-IP-0842, Waste Tanks Project Administration for Tank Waste Remediation Operations provides a system of planned responses to minimize risks to personnel, equipment, buildings, and the environment in the event of emergencies including fire.

15.0 SECURITY AND SAFEGUARD CONSIDERATIONS RELATED TO FIRE PROTECTION

The West Area Storage and Staging Facility will be located near the 272WA Building in 200 West Area. Access to 200 West Area is through the 200 West Main Gate. There are no security barriers or special coordination requirements that would hinder the fire department access. Previous fire department responses to the 200 West Area have shown that the existing procedures are adequate.

16.0 NATURAL HAZARDS IMPACT ON FIRE SAFETY

16.1 FLOODS

The 200 Areas are situated on a plateau and the structure is not susceptible to flooding even by the "probable maximum flood" postulated by the U.S. Army Corps of Engineers (ERDA 1975) for the Columbia River Basin; therefore, flooding does not impact the fire safety features of the facility.

16.2 TORNADOES

As a Safety Class 4 facility, the building is not designed to withstand tornadoes. The facility shall be designed to withstand wind loads of 70 miles/hour, in accordance with the Hanford Standard Design Criteria (SDC) 4.1 "Design Loads for Facilities," as a Safety Class 4 structure.

16.3 EARTHQUAKES

Eastern Washington is a region of low-to-moderate seismicity. Based on the seismic history since 1840, the U.S. Coast and Geodetic Survey has designated Eastern Washington as Zone 2B seismic probability, implying a potential for moderate damage from earthquakes. The facility is Safety Class 4 and is designed to withstand a potential earthquake; therefore, an earthquake does not impact the fire safety features of the facility.

17.0 EXPOSURE FIRE POTENTIAL

This facility meets the exposure separation criteria established in NFPA 80A, Recommended Practice for Protection of Buildings from Exterior Fire Exposures. The facility placement exceeds the 60 foot minimum exposure distance in all directions. The facility exposure on the north, south and west sides is over 100 feet from other facilities in the area. Exposure to the east is over 60 feet from the nearest facility.

APPENDIX A
PROPOSED FACILITY CONFIGURATION AND SITE LOCATION

WEST TANK FARM STORAGE AND STAGING FACILITY (3,150 SQ. FT.)

