

CH2M HILL Hanford Group, Inc.	Manual	ESHQ
FIRE PROTECTION SYSTEM	Document	TFC-ESHQ-FP-STD-09, REV A-1
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HEATER USE	Issue Date	December 19, 2005
	Effective Date	December 19, 2005

[Ownership matrix](#)

1.0 PURPOSE AND SCOPE

(5.1.1, 5.1.2)

This standard provides the requirements for developing a winterization program to ensure fire systems are protected against cold weather conditions and to ensure the safe use of portable heaters.

These requirements apply to all Tank Farm Contractor (TFC) managed facilities, operations, and activities.

2.0 IMPLEMENTATION

This standard is effective on the date shown in the header.

3.0 STANDARD

The facility management responsible for the maintenance of each facility provided with fire protection systems or components shall ensure that a documented winterization program is in place for those facilities.

The portable heater requirements apply to all aspects of portable heater use, as appropriate. Obtain guidance from the fire protection engineer if there are any concerns or questions about the use of portable heaters.

3.1 Documenting and Correcting Deficiencies Resulting from Annual Inspections

Document any winterization program deficiencies and initiate corrective action to repair or resolve the deficient conditions. Maintain winterization program documentation and records in accordance with [TFC-PLN-13](#).

3.2 Prevent Fire Systems from Freezing

Maintain any facility supplied with fire protection systems or components with sufficient heat and/or non-combustible insulation to prevent freezing and damage to the system and components.

3.3 Use of Heat Tape and Portable Heaters for Freeze Protection

1. Heat tape and portable heaters may be used to winterize existing fire protection systems only if appropriately engineered protection measures are not readily available or feasible. If such measures must be used, the additional requirements must be addressed.
2. Consult the Safety & Health fire protection engineer before using portable heaters. A fire permit is required prior to the use of any portable fuel-fired heaters within tank farms. The Safety & Health fire protection engineer will ensure that the conditions of the proposed use are evaluated by Nuclear Safety & Licensing prior to issuing the fire permit.

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3. Managers shall ensure that the heaters are used in accordance with the manufacturer's recommendations, including the following:
 - Maintain adequate clearance to combustible furnishings, surfaces, or materials
 - Maintain adequate ventilation for fuel-fired heaters to prevent products of combustion build-up and to maintain stable flame quality
 - Use correct/appropriate fuel and refueling practices.
4. Makes and models of portable heaters shall be recognized and listed by an organization concerned with product evaluation (e.g., Underwriter's Laboratories (UL)) or be certified by the American Gas Association (AGA) for the intended application. Portable heaters shall not be modified for any other applications.
5. Fuel for heaters shall be stored and handled in accordance with [TFC-ESHQ-FP-STD-11](#) and [TFC-ESHQ-FP-STD-03](#).
6. All liquefied petroleum gas-fired and other fuel-fired heaters shall be permitted by the Hanford Fire Marshal in accordance with TFC-ESHQ-FP-STD-10.
7. Fuel fired heaters shall be located outside and the heat ducted indoors, unless otherwise permitted by the Hanford Fire Marshal.
8. Liquefied petroleum gas-fired heaters shall not be used indoors, except as permitted by the Hanford Fire Marshal. Examples where heaters may be needed are:
 - In buildings undergoing construction, repairs, or modifications
 - As temporary heat in non-combustible industrial occupancies
 - In other buildings for temporary, emergency heating purposes when necessary to prevent damage to the building or its contents; these heaters shall be continuously attended.
9. If heat tape is to be used as the primary heat source to prevent existing fire suppression system piping from freezing:
 - a. All new and/or replacement heat tape installed must be UL listed for use on fire protection systems as well as the piping material being protected.
 - b. The heat tape must be self-regulating.
 - c. Non-combustible insulation should be used over the pipe and heat tape.

- d. The fire system pipe temperature shall be monitored by a system that includes a mechanism to transmit a trouble alarm to the Hanford Fire Department if the pipe temperature drops below 40°F.
- e. Heat tape shall not be used for new system designs.

NOTE: An exception to this rule is that heat tape, in compliance with the other requirements of this standard, may be used to protect fire system risers in unheated trailer crawl spaces from freezing.

- f. All heat tape installations shall be approved by the Safety & Health Fire Protection organization/Hanford Fire Marshal.

4.0 DEFINITIONS

No terms or phrases unique to this standard are used.

5.0 SOURCES

5.1 Requirements

- 1. DOE O 420.1A, "Facility Safety." (S/RID)
- 2. ORP M 420.2-1, "ORP Fire Protection Program." (S/RID)

5.2 References

- 1. TFC-ESHQ-FP-STD-03, "Flammable/Combustible Liquids.
- 2. TFC-ESHQ-FP-STD-11, "Fire Protection Requirements for Construction, Occupancy, Demolition Activities.
- 3. TFC-PLN-13, "Fire Protection Program."