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### **Level 2 Administrative Procedure**

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3	Minor Revision/Periodic Review: updated to current template and format; added new Appendix A, <i>Regulatory Requirements Flow Down</i> , and associated step in 1.0, <i>Purpose</i> .	All

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## 1.0 PURPOSE

- 1.1 This procedure provides instructions for procurement, inspection, and safe use of portable heaters that are required to meet applicable codes, standards, and regulations.
- 1.2 This document implements applicable regulatory requirements. They are listed in Appendix A, *Regulatory Requirements Flow Down*.

## 2.0 SCOPE AND APPLICABILITY

- 2.1 This Level 2 procedure addresses safe work practices, regulatory compliance, and handling/control requirements pertaining to portable heaters.
- 2.2 This procedure applies to Fluor-BWXT Portsmouth LLC (FBP) and contracted labor resources personnel who procure, inspect, or use a portable heater(s) to perform work at the United States Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant (PORTS).

### Exceptions:

Resistance wire type space heaters, such as the 480 volt heaters used in the Process Buildings **are** permitted with Facility Manager approval.

## 3.0 GENERAL INFORMATION

- 3.1 All personnel are expected to comply with this procedure and to exercise safety first when using, maintaining, and storing portable heaters.
- 3.2 Types of portable heaters approved for use at PORTS include, but are not limited to:
  - A. Radiant style oil filled heaters
  - B. Ceramic heaters
  - C. Quartz tube heaters
  - D. Heat lamps
  - E. Fuel-fired heaters (Direct Fired and Indirect Fired)
  - F. 480 Volt Resistance wire type space heaters (i.e., use in the Process Buildings) **are** permitted only with Facility Manager approval
  - G. Other portable heaters not listed above as approved by Facility Manager **and** Fire Protection.
- 3.3 Resistance wire type space heaters are **not** permitted for office or cubicle use.
- 3.4 Portable heaters for office use shall have a rating of no greater than 1500 watts.

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#### **4.0 USE REFERENCES**

- A.** FBP-FP-PRO-00071, *Flammable and Combustible Liquids*
- B.** NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*

#### **5.0 RESPONSIBILITIES**

##### **5.1 FBP Facility Managers**

- 5.1.1** Approves the use of portable heaters in their facility ensuring they are an approved type as described in Step 3.2.
- 5.1.2** Ensures the electric circuit will support the use of the portable heater.
- 5.1.3** Ensures portable heaters are tested and certified by Underwriters’ Laboratory (UL) or other nationally recognized testing laboratory.
- 5.1.4** Ensures only personnel familiar with the operation of the portable heaters shall be allowed to operate such devices.
- 5.1.5** Ensures portable heater is installed in accordance with its Manufacturer’s instructions and/or recommendations.
- 5.1.6** Ensures chimney or vent connectors, where required for indirect fuel-fired portable heaters, shall be maintained at least 460 mm (18 in.) from combustibles and shall be installed in accordance with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*.
- 5.1.7** Ensures direct fired (Salamander type) heaters maintain minimum clearances of at least 4 feet on each side, top, and rear of the equipment, and at least an 8 foot clearance from the exhaust (Heated Air) end of equipment.
- 5.1.8** Ensures Fire Protection Engineering evaluate the use of extension cords on a case by case basis.
- 5.1.9** Ensures visual inspection of direct fired (Salamander type) heaters are performed every hour during operation.
- 5.1.10** Ensures visual inspection of indirect fired heaters are performed every 3 hours during operation.
- 5.1.11** Ensures Manufacturer’s owner/safety documentation (paper or electronic) is available for portable heaters used in their facility.

##### **5.2 Employees**

- 5.2.1** Ensures portable heaters are used according to Manufacturer’s owner/safety documentation (paper or electronic).

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**5.2.2** Ensures inside of portable heaters are clean prior to use and clean with compressed air before start up, as necessary.

**5.2.3** Ensures visual inspection is done for first 15 minutes of operation.

**NOTE**

Portable electric heaters used in an office or cubicle area should not be left on unattended. Brief absences (i.e., going to copier, restroom, microwave, etc.) during the course of work is acceptable.

**5.2.4** Ensures portable electric heaters used in an office or cubical area is turned off when leaving the area for an extended amount to time.

**5.2.5** Ensures visual inspection of direct fired heaters is performed every hour during operation.

**5.2.6** Ensures visual inspection of indirect fired heaters is performed every 3 hours during operation.

**5.2.7** Ensures all safety precautions are followed.

**5.2.8** Ensures portable heaters are secured and present no tripping hazards.

**5.2.9** Ensures portable heaters used outdoors or in wet locations are properly maintained.

**5.2.10** Ensures portable heater required clearances are maintained.

**5.3 FBP Procurement**

Ensures portable heaters are purchased according to FBP procedural guidelines.

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## 6.0 ACTIONS

### 6.1 Portable Heating Devices

#### FBP Facility Manager or designee

#### **NOTE**

Extension cords cannot be used except with certain types of industrial heaters that require the use of extension cords to power fans and pumps on the unit. Fire Protection Engineering will evaluate these on a case by case basis.

- 6.1.1 Ensure portable heater is plugged directly into an outlet.
- 6.1.2 Ensure portable heater is used as directed in the manufacturer's owners/safety documentation (paper or electronic).

### 6.2 Operational Guidelines

#### Employees

- 6.2.1 Ensure portable heater is used as directed in the Manufacturer's owner/safety documentation (paper or electronic).
- 6.2.2 Ensure portable heater electric power cord is plugged directly into an outlet.
- 6.2.3 Ensure electric power cords are placed so they do not present a tripping hazard or are subject to damage.
- 6.2.4 Ensure dust and dirt is removed from inside the portable heater with compressed air on initial start-up after storage and prior to operation as necessary.

#### **CAUTION**

**Do not locate portable heaters where they are concealed.**

- 6.2.5 Ensure portable heater is situated so it can be seen and is secured.
- 6.2.6 Ensure direct fired (Salamander type) heaters maintain minimum clearances of at least 4 feet on each side, top and rear of the equipment, and at least an 8 foot clearance from the exhaust (heated air) end of equipment.
- 6.2.7 Operate fuel fired heaters (direct fired and indirect fired) only in areas with adequate ventilation.
- 6.2.8 Ensure the following on portable heater while operating:
  - Continuously perform visual inspect for the first 15 minutes of operation.
  - Perform visual inspection of direct fired (Salamander type) portable heater every hour during operation.

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- Perform visual inspection of indirect fired portable heater every 3 hours during operation.

**NOTE**

Portable heaters should operate as described and expected per the manufacture documentation under normal operation. Heaters presenting unexpected noise, vibration, lack of fan operation (if equipped), lack of heat, lack of temperature control (if equipped), fuel leakage, smoke (or excessive smoke for fuel fired heaters), etc. may indicate heater malfunction and should not be used until checked.

- While performing visual inspections on portable heater, ensure the portable heater is operating properly.
  - While performing visual inspections, check objects near the portable heater and if object is hot to the touch, move the object or relocate the portable heater.
  - While performing visual inspections, ensure combustibles have not been introduced near or within the required clearance area of portable heater.
- 6.2.9** Shut off and unplug fuel fired (direct fired and indirect fired) portable heaters from power source prior to refueling.
- 6.2.10** Allow portable heater to cool **prior to** refueling (see FBP-FP-PRO-00071, *Flammable and Combustible Liquids*, for additional guidance).
- 6.2.11** Conduct refueling operations in an approved manner (see FBP-FP-PRO-00071, *Flammable and Combustible Liquids*, for additional guidance).
- 6.2.12** Ensure portable heaters used outdoors or in wet locations are moved indoors or covered when not in use.

**NOTE**

Portable electric heaters used in an office or cubicle area should not be left on unattended. Brief absences (i.e., going to copier, restroom, microwave, etc.) during the course of work is acceptable.

- 6.2.13** Ensure portable electric heaters used in an office or cubical area is turned off when leaving the area for an extended amount to time.
- 6.2.14** After running portable heater and before completely shutting down, ensure portable heaters equipped with a fan are allowed to operate for an adequate amount of time to purge heat from the unit, as required.
- 6.2.15** Ensure the following safety precautions are followed:
- **Do not** modify portable heaters.

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- **Do not** use a defective portable heater.
- **Do not** use an adapter plug, to connect a grounding type plug into an ungrounded receptacle.
- **Do not** plug in or unplug a portable heater with a wet hand or when the plug is wet.
- **Do not** plug portable heaters into temporary power taps.

### **6.3 Purchasing Requirements**

#### **Employee or FBP Procurement**

- 6.3.1** Ensure portable heaters are tested and certified by UL or other nationally recognized testing laboratory.
- 6.3.2** Ensure portable heater, for office use, has a rating of no greater than 1500 watts.
- 6.3.3** Ensure portable heater has a guard around the heating element.
- 6.3.4** Ensure portable heater has safety devices that turns off the portable heater if overheating or tip over occurs.

### **7.0 RECORDS**

None

### **8.0 DEFINITIONS/ACRONYMS**

#### **8.1 Definitions**

- A. Direct Fired Heater** – A heater which has a fan forcing air past an open flame, delivering heated air that contains exhaust fumes and odors. Direct fired heaters are for use in open or well ventilated areas.
- B. Indirect Fired Heater** – A heater which the flame is contained in a burn chamber which heats a “heat exchanger”. A fan forces air over and around the heat exchanger, thus heating the air. Indirect fired heaters are provided with a flu/chimney pipe for burn chamber exhaust fumes.
- C. Salamander** – A variety of portable forced-air or convection space heaters, often using kerosene or propane as fuel but also requiring electricity, used in ventilated areas for worksite comfort.

#### **8.2 Acronyms**

- A. FBP** – Fluor-BWXT Portsmouth LLC.
- B. NFPA** – National Fire Protection Association



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**C. PORTS** – Portsmouth Gaseous Diffusion Plant

**D. UL** – Underwriters' Laboratory

## **9.0 SOURCE REFERENCES**

- A.** FBP-SO-14-PM-005, *Use of Temporary Fueled Heaters*
- B.** FM Global Property Loss Prevention Data Sheets 6-20, *Space Heaters*
- C.** National Fire Protection Association (NFPA) 1, *Fire Code Chapter 11.5 Heating Appliances*
- D.** NFPA 31, *Standard for the Installation of Oil-Burning Equipment*
- E.** NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*
- F.** NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*

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**Appendix A**  
**REGULATORY REQUIREMENTS FLOW DOWN**

1. NFPA 1, *Fire Code*, Chapter 11.5, *Heating Appliances*
2. NFPA 241, *Standard for Safeguarding Construction, Alteration and Demolition Operations*