



## FIRE PROTECTION IMPAIRMENT PROGRAM STANDARD OPERATING PROCEDURE (SOP)

### I. Purpose

To establish procedures to be followed when a fire protection system is taken out of service due to construction, alteration, power outage, repair or an emergency condition. These procedures include measures taken during the impairment to ensure that increased risks are minimized and the duration of the impairment is limited. Procedures set forth in this policy do not apply to routine scheduled maintenance or testing.

### II. Scope

This policy applies to all TTU employees, outside contractors and their representatives, or any company representative hired by TTU to provide services or any outside trade workers who will be working on university property.

### III. Overview

The probability of a fire or explosion causing major damage is increased whenever a fire protection system is impaired. The longer the fire protection system is impaired, the greater the probability becomes. Therefore, it is necessary to minimize the duration and scope of any impairment or provide for an alternate protection system.

A Fire Protection Impairment Program is an effective management program used to:

- Supervise the safe shutdown of fire protection systems
- Control potential fire hazards during the impairments
- Restore the fire protection system to service as soon as possible

### IV. Definitions

**Fire Protection Systems:** Sprinkler systems, standpipe systems, fire hose systems, underground fire service mains, fire pumps, water storage tanks, water spray fixed systems, foam-water systems, special extinguishing systems, fire service control valves, fire alarms systems, and emergency lights.

**Firewatch:** A person or persons designated to physically patrol the area where the fire protection system is impaired.

**Impairment:** A shutdown, in whole or part, of a fire protection system.

**Emergency impairment:** When a fire protection system is out of service due to an unexpected occurrence, such as a ruptured pipe or an unexpected power outage.

**Planned impairment:** When a fire protection system is out of service due to work that has been planned in advance, such as revisions to the water supply or sprinkler piping system.

**Level 1 impairment:** A shutdown of an entire fire protection system, or major portion, significantly affecting occupant life safety.

**Level 2 impairment:** A shutdown of a limited number of components of a fire protection system are found defective or removed from service. A Level 2 impairment represents a minimal impact to the overall life safety of building occupants.

**Impairment Coordinator (IC):** The TTU Employee who manages the impairment while system work is being performed and has overall responsibility for proper implementation of the Fire Protection Impairment Program. The Capital Project Manager or Facilities Supervisor responsible for the maintenance or repair of any fire protection component or system will be designated as the Impairment Coordinator.

## **VI. Responsibilities**

### **Impairment Coordinator (IC)**

- Any TTU employee who impairs a fire protection system, in whole or part, is the Impairment Coordinator (IC) and must first notify and coordinate with EHS.
- The IC, in coordination with EHS, will determine the level of impairment due to a shutdown, in whole or part, of a fire protection system and any necessary actions.
- The IC will be responsible for coordinating and completing the Impairment Permit when performing or authorizing contractors to perform Level 1 impairments.
- The IC will be responsible for issuing and posting the Impairment Permit to the fire department connection for sprinkler system impairments or the fire alarm annunciator/control panel for fire alarm systems as appropriate as well as removal when impairment is complete.
- The IC will be responsible for coordination of the firewatch, if it has been determined that a firewatch is necessary. The IC will ensure firewatch activities are completed and documented as required in this SOP.
- The IC will be responsible for providing training to TTU employees and/or contractors who will be utilized as firewatch personnel.

### **Contractors, Outside Workers, Outside Company Representatives**

- Any Contractor/contractor's representative or outside worker who impairs a fire protection system, in whole or part, must first notify the Impairment Coordinator at facilities. If an impairment permit is required, the contractor, contractor's representative, or outside worker will attach the Fire & Life Safety System Permit/ Impairment Tag (Schedule A) to the fire department connection for sprinkler system impairments or to the fire alarm annunciator/control panel for fire alarm systems.

## VII. Procedures

### LEVEL 1 Impairments

- EHS, Facilities and PD will be notified of all impairments of a fire protection system.
- The fire alarm monitoring company, if utilized to monitor that particular fire alarm system, will be notified of a preplanned impairment of a fire alarm system.
- The IC will notify the Building Coordinator / Occupants of the affected building for preplanned impairments.
- The IC will coordinate and complete the Impairment Permit.
- The IC will authorize the preplanned impairment and verify that the following procedures have been implemented:
  1. The extent and expected duration of the impairment have been determined.
  2. The areas or buildings involved have been considered and the increased risks determined.
  3. When a required automatic sprinkler system is out of service for an extended duration, the impairment coordinator will arrange for one of the following:
    - a) Evacuation of the building or portion of the building affected by the system out of service, or
    - b) A fire watch for all portions of the building left unprotected by the shutdown until the fire alarm or sprinkler system has been returned to service. A fire watch utilized for a fire alarm or automatic sprinkler system shutdown will be composed of individuals beyond normal staffing, assigned to walk the areas affected. The number of fire watch personnel utilized will be determined by the impairment coordinator. Firewatch personnel used for fire alarm shutdowns must be specially trained in fire prevention and in occupant and fire department notification techniques. Fire watch personnel used for automatic sprinkler system shutdowns must be specially trained in fire prevention and in the use of fire extinguishers, and in occupant and fire department notification techniques.
  4. When a required fire protection system is out of service for an extended duration, the impairment coordinator will arrange for one of the following:
    - a) Evacuation of the building or portion of the building affected by the system out of service, or
    - b) Implementation of mitigating measures for the period that the system is impaired. This considers the building occupancy type, nature and duration of impairment, building occupancy level during the impairment period, active work being conducted on the fire alarm system during the impairment, condition of other fire protection systems and features, and hazards and assets at risk. Appropriate mitigating measures range from simple occupant notification to full- time fire watch.
  5. Sprinkler systems: the impairment coordinator will post a completed Fire Protection Impairment Permit at the fire department connection, indicating which system, or part thereof, has been removed from service.
  6. Fire alarm systems: the impairment coordinator will post a completed Fire Protection Impairment Permit at the fire alarm annunciator or fire alarm control panel.

## **LEVEL 2 Impairments**

- All level 2 impairments, both preplanned and emergency, must be reported to EHS, Facilities and PD.
- TTU facilities will be notified of a preplanned impairment of a fire alarm system.
- The fire alarm monitoring company, if utilized to monitor that particular fire alarm system, will be notified of a preplanned impairment of a fire alarm system.
- The impairment coordinator will ensure that level 2 impairments are satisfactorily remediated.

## **Emergency Impairment Procedures**

When an emergency impairment occurs, emergency action will be taken to minimize potential injury and damage. The impairment coordinator will implement items above with the following exception:

- Any damage to fire protection systems caused by the contractor will be repaired by a licensed fire protection company at the contractor's expense. Any required firewatch activities due to damage of the fire protection equipment will be supplied by the contractor. Contractor must supply their own firewatch activities to ensure compliance with this policy and other TTU policies, i.e. Hot Work Permit Policy.

## **Restoring Systems to Service**

When all impaired equipment is restored to normal working order, the Impairment Coordinator will verify that the following procedures have been implemented:

- Any necessary inspections and tests have been conducted to verify that affected systems are operational.
- Building Coordinators / Occupants for the affected buildings have been advised that protection is restored.
- If a fire alarm system is involved, EHS, Facilities, PD and monitoring company (if any) have been advised that protection is restored.
- The Fire Protection Impairment Permit has been removed.

## **REFERENCES**

NFPA 1 – Uniform Fire Code

NFPA 25 – Maintenance of Water Based Fire Protection Systems

NFPA 72 – National Fire Alarm Code

NFPA 101 – Life Safety Code

International Fire Code



# Fire Protection Impairment Permit

Requestor (Employee):	Requestor Phone Number:	Today's Date:
Building Name:	Location / Room #:	
Contractor / Organization / Name:	Cell Phone #:	

Reason for Impairment:	Work Order Number:
Requested Date of Impairment:	Requested Time of Impairment:
Requested Date System Restored:	Requested Time System Restored:

Fire Protection System Impaired (Check all that apply):

<input type="checkbox"/> Fire Alarm System	<input type="checkbox"/> Detection System	<input type="checkbox"/> Automatic Sprinkler System
<input type="checkbox"/> Standpipe and Hose System	<input type="checkbox"/> Underground piping & control valves	<input type="checkbox"/> Fire Pumps
<input type="checkbox"/> Water Supply	<input type="checkbox"/> Special Suppression Systems	<input type="checkbox"/> Other _____

Comments:	
Authorized Signature:	Date:

Required Impairment Checklist:

<input type="checkbox"/> Notified EHS, PD, Facilities	<input type="checkbox"/> Fire Watch Established (If Required)
<input type="checkbox"/> Notified Building Coordinator / Occupants	<input type="checkbox"/> Hot Work Permit (If Required)
<input type="checkbox"/> Impairment Permit Posted	<input type="checkbox"/> Remove Fire Alarm / Devices
<input type="checkbox"/> Lockout / Tagout Reviewed	<input type="checkbox"/> Hazardous Operations Stopped

Actual Start Date: \_\_\_\_\_ Time: \_\_\_\_\_ End Date: \_\_\_\_\_ Time: \_\_\_\_\_

Person(s) Performing Work (Print Names): \_\_\_\_\_

Required Restoration Checklist:

<input type="checkbox"/> Notified EHS, PD, Facilities	<input type="checkbox"/> Notified Building Coordinator / Occupants
<input type="checkbox"/> Remove Fire Impairment Permit	<input type="checkbox"/> All mechanical devices in service (locked back in proper position)
<input type="checkbox"/> Fire Alarm / Devices back in service	

EHS Approval: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_

**POST PERMIT ON APPROPRIATE FIRE PANEL OR CONNECTION  
AND AT WORKSITE DURING IMPAIRMENT**

# Fire Watch Implementation Checklist

The primary role of the Fire Watch personnel is to serve as a "human smoke detector" and to notify Tn Tech Police Department at 911 or (931) 327-3234 at the first sign of smoke/fire.

- 1) The Fire Watch Log will need to be updated as checks are made by Fire Watch personnel.
  - Inspections need to begin as soon as notification has been made that a Fire Watch is needed.
- 2) Fire Watch Door Notice that is provided in this document is posted at all entrances.
  - In dorms/apartments, post notices on exterior doors.
  - In academic/staff halls, post notices in lobby, elevators, on bulletin boards, and on bathroom doors throughout the building.
- 3) Obtain a whistle(s) which can be used to notify occupants that smoke or fire has been detected.
- 4) Conduct a continuous patrol of the entire building, including corridors, hallways, laundry rooms, basement, lobby, stairwells, recreation rooms, lounges, and any other common areas. Patrol your designated area or building at least once each half hour.
  - Remain alert to signs of smoke and/or fire.
  - Listen for in-room smoke detectors sounding.
  - Look for observable signs of smoke and/or fire.
  - Enter all stairwells - open doors and look into each stairwell.
  - Enter all common areas including basement, lounges, laundry room, and dining areas.
- 5) At first sign of smoke or fire, Fire Watch personnel must:
  - Pull the nearest fire alarm pull station.
  - Exit the building and call 911.
  - If the fire alarm horns are not working, blow the whistle while exiting to notify as many occupants as possible until the fire department arrives.
- 6) Do not put yourself in jeopardy - if you suspect smoke and/or fire, exit the building; contacting the Tn Tech Police Department as quickly as possible.

# Fire Watch Log

Name of Building under Fire Watch \_\_\_\_\_

Person performing FireWatch \_\_\_\_\_

I have read the instructions about conducting this Fire Watch and understand that I am responsible for following those instructions and patrol my designated area or building at least once each half hour.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_:\_\_\_ am pm Area patrolled: \_\_\_\_\_

Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_:\_\_\_ am pm Area patrolled: \_\_\_\_\_

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Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_:\_\_\_ am pm Area patrolled: \_\_\_\_\_

# Attention Occupants

## FIREWATCH IN PROGRESS

*Fire alarm or sprinkler system is out-of-service.*

Inspectors are conducting a continuous tour of common areas to provide smoke and/or fire detection. Please be alert to evidence of smoke or fire. Contact Tn Tech Police Department at **(931) 327-3234** or **911** immediately if fire is seen or suspected.

**Evacuate the building immediately upon hearing an air horn, whistle, or other alert.**