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Standard Operating Procedure  
for  
**CNSE Fire Protection Impairment**

REVISION

Rev No.	DCN No.	Change Summary	Release Date	DCN Initiator	Document Owner
2	DCN0758	Added: more definitions, details on Fire-Watch and Section 3.4 Fire Watch Personnel; Identified working with EHS, FOG and Air Liquide.	2-6-14	R. Willey	B. Drobnicki

Prior revision history, if applicable, is available from the Document Control Office.

## 1 PURPOSE AND SCOPE

- 1.1 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.
- 1.2 A Fire Protection Impairment Program is an effective management program used to:
- Supervise the safe shutdown of fire protection systems;
  - Ensure communication of impairment;
  - Control potential fire hazards during the impairments;
  - Restore the fire protection system to service, as soon as possible.
- 1.3 **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.*
- 1.4 **Scope:** This policy applies to all CNSE ([College of Nanoscale Science and Engineering](#)) employees, outside contractors and their representatives, or any company representative hired by CNSE to provide services or any outside trade workers who will be working on CNSE property.

## 2 DEFINITIONS

- 2.1 **EHS:** Environmental Health and Safety
- 2.2 **FOG:** Facilities Operations Group
- 2.3 **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.

- 2.4 **Fire-Watch:** A person or persons trained and designated to physically patrol the area where the fire protection system is impaired.
- 2.5 **Impairment:** a shutdown, in whole or part, of a fire protection system.
1. **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.
  2. **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.
  3. **Level 1 Impairment:** when a limited number of components of a fire protection system are found defective or removed from service for a limited time. A Level 1 impairment represents a minimal impact to the overall life safety of building occupants. Security increases patrols [or fire-watch may be required](#).
  4. **Level 2 Impairment:** a shutdown of an entire fire protection system, or major portion, significantly affecting occupant life safety. [Fire-watch is required](#).
- 2.6 **Impairment Program Coordinator (IPC):** The person who manages the impairment while system work is being performed and has overall responsibility for proper implementation of the CNSE Fire Protection Impairment Procedure. The CNSE Security Supervisor, and in the absence of the Security Supervisor the Assistant Security Supervisor, will be designated as the Impairment Program Coordinator.

### 3 RESPONSIBILITIES

#### 3.1 CNSE Employees

Any employee who impairs a fire protection system, in whole or part, must immediately notify the Impairment Program Coordinator (CNSE Security Supervisor). If impairment is required, the Security Supervisor must ensure that the CNSE Fire Protection System Permit CFM-00005-F1 is hung beside the Security Control Center (SCC) fire alarm control panel for fire alarm systems.

#### 3.2 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 Program Coordinator (Security Supervisor). Contractor will complete the CNSE Fire Protection System Permit CFM-00005-F1 and Security

Supervisor will sign-off (authorizing the deactivation / impairment) prior to submission for approval of the Work Authorization Permit.

### 3.3 Impairment Program Coordinator (IPC)

- The IPC will determine the level of impairment due to a shutdown, in whole or part, of a fire protection system.
- The IPC will be responsible for ensuring completion of the Fire Impairment Forms (associated with this document), when authorizing Level 2 impairments.
- The parties that need the fire system to be off-line are required to coordinate the fire-watch, if it has been determined by the IPC that a fire-watch is necessary. The IPC will ensure documentation of fire-watch activities on SSM-01003-F1, the CNSE Fire-Watch Log Sheet.
- The IPC will be responsible for ensuring that communications have been established and maintained with fire-watch personnel from initiation to completion of work.

### 3.4 Fire Watch Personnel

- Fire Watch Personnel will come to the SCC to sign out a radio and to receive the CNSE Fire-Watch Log Sheet (SSM-01003-F1) and must return the sheet to the IPC upon completion of fire-watch.
- Indicate on CNSE Fire-Watch Log Sheet the starting and completion time of each area checked.
- Fire Watch Personnel will report any fire, smoke, or unsafe conditions to SCC via radio.

## 4 ASSOCIATED DOCUMENTS

4.1 **CFM-00005-F1** Fire Protection System Permit

4.2 **SSM-01003-F1** CNSE Fire-Watch Log Sheet

4.3 **SSM-01003-F2** CNSE Fire System Impairment Worksheet

## 5 PROCEDURES

### 5.1 Impairment Coordination Procedures – Level 1

- All Level 1 impairments, both pre-planned and emergency, must be reported to the Impairment Program Coordinator.
- CNSE Security will be notified of an authorized pre-planned impairment of a fire alarm system through the CNSE Work Permit process.
- The fire alarm monitoring company will be notified of a pre-planned impairment of a fire alarm system.
- The Impairment Program Coordinator will ensure that Level 1 impairments are satisfactorily remediated.
- IPC will determine if Security increases patrols or a fire-watch is required.

### 5.2 Impairment Coordination Procedures – Level 2

#### 5.2.1 *Pre-planned Impairments*

- CNSE Security will be notified by the CNSE Work Permit process of an authorized pre-planned impairment of a fire alarm system.
- The fire alarm monitoring company will be notified by CNSE Security of a pre-planned impairment of a fire alarm system.
- The Facilities and Site Services Managers, and Director of Security Services will be notified by CNSE Security of the pre-planned impairment.
- The Albany Fire Department (AFD) will be notified by CNSE Security of the impairment.
- The IPC will complete the CNSE Fire System Impairment Worksheet SSM-01003-F2.
- The IPC will approve the Fire Protection System Permit (CFM-00005-F1).
- The IPC will verify with Air Liquide, EHS, and FOG when necessary to ensure site specific 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 [by the IPC, EHS, FOG, and Air Liquide](#).
3. When a required automatic sprinkler system is out-of-service the Impairment Program Coordinator will notify the requestor of the necessity of a fire-watch and these fire-watch requirements:
  - a) A fire-watch, by radio or cell-phone equipped personnel, for all portions of the building left unprotected by the shutdown, until the fire alarm or sprinkler system has been returned to service.
  - b) A fire-watch utilized for a fire alarm or automatic sprinkler system shutdown will be composed of individuals beyond normal staffing, as soon possible, assigned to walk the areas affected.
  - c) The number of fire-watch personnel utilized will be determined by the IPC.
  - d) Fire watch personnel used for fire alarm shutdowns must be specially trained in fire prevention and in occupant and fire department notification techniques.
  - e) 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. The IPC will ensure communication with the Emergency Response Team (ERT) in the conduct of the fire-watch. ERT personnel may be directed to take part in any fire-watch operations.
5. When the fire alarm system is out-of-service, the Impairment Program Coordinator will arrange for the following [with EHS, FOG and Air Liquide](#):
  - a) 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.
- b) The IPC will ensure the communication and participation of the ERT in the conduct of fire-watch operations.
6. Sprinkler Systems: the IPC will authorize a Fire Protection System Permit (CFM-00005-F1) and make sure it is located at the SCC fire panel, indicating which system, or part thereof, has been removed from service.
7. Fire Alarm Systems: the Impairment Program Coordinator will authorize a Fire Protection System Permit (CFM-00005-F1), and make sure it is located at the fire alarm control panel in the Security Control Center.

### 5.2.2 *Emergency Impairment Procedures*

When an emergency impairment occurs, emergency action will be taken to minimize potential injury and damage.

- The IPC will implement items 1 through 6 of section *Pre-planned Impairments* 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 fire-watch activities required due to damage of the fire protection equipment will be supplied by trained CNSE personnel. Any fire-watch activities supplied by CNSE will be charged to the contractor.

### 5.2.3 *CNSE Security Impairment Procedure:*

Upon notification of fire system impairment CNSE Security will make immediate notification to the alarm monitoring service and Albany Fire Department identifying such fact. CNSE Security personnel assigned to the SCC, will dedicate their attention to the fire alarm system until the issue causing the impairment of the system is resolved.

#### 5.2.3.1 Receipt of Alarm

##### Where Scheduled Work is NOT Occurring

If an alarm or notification of fire condition is received during the period of impairment for areas where scheduled work is NOT occurring, the CNSE Security Officer will make immediate notification to the Albany Fire Department for response using 9-1-1.

##### Where Scheduled Work is Occurring

If there is scheduled work occurring in the area of the alarm:

- The Security Officer will make immediate notification to the roving Security patrol, ERT, FOG and EHS (EHS responds M-F 0700-1800) and fire-watch (if applicable) for their response and investigation.
- The Security Officer assigned at the SCC will make immediate contact with personnel working within the Work Permit area to determine the cause of the alarm (call on cell phone using Work Permit contact information).
- The SCC will request estimated time of arrival from responders. First responder to the scene is to report reason for alarm condition or report of area findings.
- If an actual fire event is determined the SCC will immediately make notification to AFD via 9-1-1 for response. Additional information from the fire alarm location will be immediately communicated to the Albany Fire Department to assist their response.
- A Security Officer and the ERT will be dispatched to the scene. An immediate check with on-site personnel responsible for the work will be conducted (call on cell phone using Work Permit contact information).



### 5.3 Restoring Systems to Service

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

- Contact the requestor to verify that systems should be reactivated.
- Any necessary inspections and tests have been conducted to verify that affected systems are operational.
- Facilities Operations Group (FOG) has been advised that protection is restored.
- If a fire alarm system is involved, the CNSE Security Control Center and monitoring company have been advised that protection is restored.
- The Fire Protection System Permit (CFM-00005-F1) has been removed.
- Notified agencies and persons advised that fire alarm and/or suppression systems have been restored.

## 6 REFERENCES

NFPA 1 – 13.3.4 (2003 ed.), Uniform Fire Code

NFPA 25 – 14 (2003 ed.), Maintenance of Water Based Fire Protection Systems

NFPA 72 – 4.6 & 10.2.1.2, National Fire Alarm Code (2002 edition)

NFPA 101 – 9.6.1.7 & 9.7.6 (2003 ed.), Life Safety Code

Fire Code of New York State, 2007 edition.