

 CSN Procedure	Facilities Management
Category: Environmental Health and Safety	Effective Date: 02/26/2024
Fire Protection Impairment & Red Tag Permit Program	

I. PURPOSE

This program is based on FM Global Fire Protection Impairment Data Sheet 10-7 and provides guidance on managing the impairments to fire protection systems that automatically or manually discharge fire extinguishing agents (e.g., water, foam, gaseous, or dry chemical). The goal of this program is to supervise the safe shutdown of fire protection systems, control potential fire hazards during impairments, and restore fire protection systems to service as soon as possible.

II. SCOPE

This program applies to all planned (e.g., maintenance or renovation activities) and unplanned fire protection sprinkler system impairments in CSN buildings. This program does not apply to new construction projects that are under the exclusive control of a contractor. An impairment is defined as anything that results in the planned or unplanned shutdown of a fire protection system. This includes, but is not limited to, the shutdown of fire protection water supplies, sprinklers, fire pumps, special fire protection systems, and fire alarm systems controlling interlocks.

III. DEFINITIONS

Control valve: A valve controlling water or agent flow to an automatic fire protection system.

Fire protection system: Devices, equipment, and systems or combinations of systems used to detect a fire, activate an alarm, extinguish or control a fire, control or manage smoke and fire, or any combination thereof.

Impairment: The planned or unplanned shutdown of a fire protection system.

Interlock: A device that senses a limit or off-limit condition or an improper sequence of events. It causes the shutdown of the offending or related piece of equipment, or prevents things from happening in an improper sequence, to avoid a hazardous condition.

Main drain (2-inch drain): The primary drain for a sprinkler system located on the system riser.

Maintenance: Work conducted to ensure continued satisfactory operation of a device or system.

Special protection system: A protection system used for sole or supplementary protection and designated as one of the following: carbon dioxide, clean agent, dry chemical, foam, halon 1301, hybrid, or water mist.

IV. PROCEDURE

A. Responsibilities:

1. CSN Environmental Health and Safety (EHS)

- Develop, implement, and maintain CSN's Fire Protection Impairment and Reg Tag Permit Program.
- Approve all planned impairments at CSN.

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- Notify FM Global of all impairments via the FM Global Reg Tag Permit System (Red eTag, Email, or Phone Notification).
 - Provide guidance, training, and technical assistance as needed.
2. CSN Facilities Management
 - Adhere to the requirements of this program.
 - Request impairment and Red Tag Permit approval from EHS.
 - Ensure impairment approval is received before starting non-emergency operations that disable a fire protection system.
 - Coordinate impairments with contractors, vendors, fire departments, and other stakeholders as necessary.
 - Perform impairments (e.g., physically close valves) and restore systems after impairment.
 - Cease operations if unsafe conditions develop and notify Facilities leadership and EHS for a reassessment of the situation.
 - Work safely and wear appropriate personal protective equipment.
 3. CSN Facilities Management Project and Construction Managers
 - Adhere to the requirements of this program.
 - Ensure that outside contractors are made aware of CSN's Fire Protection Impairment and Red Tag Permit program and convey the expectation to fully comply with all CSN requirements while onsite.
 - When impairment is required, coordinate with the contractor and Facilities to obtain impairment approval from EHS prior to the start of work.
 4. Contractors/Vendors
 - Adhere to the requirements of this program.
 - Ensure all subcontractors adhere to the requirements of this program.
 - Coordinate impairments with CSN Facilities Management, EHS, and other stakeholders as necessary, and with as much advanced notice as possible.
- B. Fire Protection Impairment
1. Planning Impairments
 - Initiate the Red Tag Permit process by sending an electronic impairment request to EHS at: <https://csn.campusoptics.com/pr/impairment> or send an email to ehs@csn.edu with the applicable information outlined in Appendix A.
 - EHS approval is required prior to the start of work.
 - EHS shall notify FM Global of impairment using one of the following methods:
 - Red eTag Reporting Website: <https://redetag.fmglobal.com/>
 - Email: losa.custserv@fmglobal.com
 - Phone: 866-213-3931
 - Schedule work on fire protection systems during non-operational hours at the facility. If this is not feasible, ensure to halt any hazardous processes in the affected area, which may involve flammable liquids and dust.
 - Ensure that control valves for other, uninvolved fire protection systems remain open and secured during the impairment.
 - Limit the scope and duration of the impairment (i.e., impair the smallest area possible as opposed to the entire facility) and complete the work on a priority basis to minimize the amount of time fire protection is impaired.
 - Hot work (cutting, welding, brazing, grinding) is not authorized in an unprotected area.
 - Smoking is prohibited in the impaired area.

- Have all pre-work completed prior to impairing fire protection.
 - When feasible, ensure the work being done will be carried out without interruption until completion.
 - Provide temporary protection in impaired areas. For example, fire hoses connected to the sprinkler system and/or fire hydrant, extra extinguishers, charged hose lines, etc.
 - Install a red tag (refer to Appendix B example) to identify the removal of a system or a section of the system from operation. Ensure that the red tag is prominently displayed at every fire department connection and the system control valve, clearly indicating the specific system or part that has been taken out of service.
2. During Impairment
- Monitor the recommended actions outlined in Section B(1.) throughout the duration of the impairment. If conditions change or the duration/scope of the impairment needs to be extended, review the items in Section B(1.) again and notify EHS.
 - In the case of an unplanned impairment, stabilize the situation and immediately follow the precautions and notifications in Section B(1.).
3. Prolonged Impairment
- In addition to the steps above, if the fire protection system is out of service for more than a 24-hour period one or more of the following measures must be implemented:
 - Evacuation of the building or a portion of the building affected by the system out of service.
 - Implement a fire watch for the area(s) affected by the system out of service.
 - Establish a temporary water supply.
 - Eliminate all potential ignition sources and limit combustible materials in the area(s) affected by the system out of service.
4. After Impairment
- Restore fire protection equipment to full automatic service as soon as possible.
 - Complete any required/necessary testing to ensure the system is fully functional.
 - If work was done on automatic sprinkler protection, perform a 2-inch drain test on the downstream side of each valve that was closed (call sprinkler vendor if needed). This test is very important as the final check to ensure all control valves have been left in the wide-open position.
 - If work was done to install new underground mains, hydrostatically test the new mains at 200 psi for 2 hours (or 50 psi greater than the working pressure of the system). This will ensure there are no leaks in the underground main.
 - Ensure all sprinkler control valves are locked in the wide-open position.
 - Reset the alarm system; notify the central station, if applicable.
 - Notify EHS when work is complete, fire protection system has been restored, and all post-work testing is done. EHS will close out the Reg Tag Permit with FM Global.
 - Notify other applicable stakeholders that fire protection has been restored.

C. Recordkeeping

1. EHS is responsible for maintaining all impairment requests and completed FM Global Red Tag Permits.

V. **AUTHORITY AND CROSS REFERENCE LINKS**

1. [FM Global Fire Protection Impairment Management Data Sheet 10-7](#)
2. [CSN Hot Work Program](#)

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VI. APPENDICES

- Appendix A – Information Required for FM Global Red Tag Permit
- Appendix B – Example Red Tag
- Appendix C – Document Revision History



Appendix A – Information Required for FM Global Red Tag Permit

Notify FM Global Customer Service Desk of fire protection impairments by telephone (866-213-3931), fax (866-213-3932), e-mail (losa.custserv@fmglobal.com), or via the Red eTag website (<https://redetag.fmglobal.com>). Provide CSN's site index number, explain the impairment in detail, and, depending upon what type of fire protection is impaired, the following information should be provided:

- A. The type of system being impaired (sprinklers, gaseous suppression, foam, dry chemical, fire pumps, water mist, water supplies, interlocks, etc.).
- B. Approximately how long the fire protection system will be impaired.
- C. The reason the fire protection system is being impaired.
- D. What area and occupancy does the impaired fire protection system protect.
- E. If a sprinkler control valve is going to be closed, provide the following information:
 1. What valve is being shut.
 2. What area this fire protection valve protects.
 3. The reason it is being shut.
 4. Approximately how long the system be impaired.
- F. If a fire pump is going to be impaired, provide the following information:
 1. The type of fire pump (diesel or electric).
 2. Whether there is another fire pump provided that will remain in service.
 3. Whether there is an alternative water supply available.
 4. Whether the pump can be started manually in an emergency and, if so, whether there is someone on site who knows how to start this pump in an emergency.
- G. If special protection (gaseous suppression, foam, dry chemical, water mist, interlocks, etc.) is impaired, provide the following information:
 1. Whether there is automatic sprinkler protection available and in service.
 2. Whether the special protection system can be manually tripped in an emergency and, if so, whether personnel will be instructed/allowed to do this.
- H. If a fire alarm/detection system that activates an automatic fire protection system (e.g., interlocks, deluge, preaction, special protection) will be impaired, include whether automatic sprinkler protection will still be in service.
- I. If a water supply is impaired, include the following information:
 1. Whether this is the only water supply available for fire protection and, if so, whether there is a way to obtain water from other sources nearby (river, lake, etc.).
 2. Whether the fire service will be able to park a pumper truck at the facility while the water supply is impaired.



Appendix B – Example Red Tag

 ATTACH TO VALVE	
SPRINKLER VALVE SHUT	
THIS VALVE CONTROLS SPRINKLERS IN BUILDING(S):	
SHUT BY (SIGNATURE):	DATE
After valve is opened, make 2 in. (50 mm) drain test. Drop in pressure should be normal. If pressure drop is extreme and does not build up, the system is impaired and immediate investigation is necessary.	
DRAIN TEST RESULTS	
STATIC PRESSURE:	FLOW PRESSURE:
psi (bar)	psi (bar)
DRAIN TEST MADE BY (SIGNATURE):	DATE:

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Appendix C – Document Revision History

Date of Review: 2/26/2024	
Section	Change
All	New Document
Date of Review:	
Section	Change
Date of Review:	
Section	Change