



BROWN

Life Safety Equipment Impairment Program

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1 INTRODUCTION

The purpose of this program is to establish policy, procedure and responsibilities in planning for and responding to scheduled and unscheduled (emergency) impairments of life safety equipment in University owned buildings.

1.1 Application

The provisions of this program shall apply to any life safety system impairment in a building owned by Brown University. This can be applied to fire protection and suppression equipment; fire detection and alarm equipment; emergency lighting and emergency communications equipment, or other impairments that impact the life safety of an occupancy due to failure or construction. The most common system impairments include:

- Water based sprinkler systems
 - Including fire pumps, standpipes and underground piping (including municipal supplies)
- Fixed suppression systems
 - Including data rooms, cooking areas, high hazard rooms, etc.
- Fire alarm system failure or bypass of six or more devices, or one or more zones
 - Including full or partially reduced coverage
 - Master box disconnect
- Electrical power or other utility failure
- Smoke control/evacuation system failure to operate as designed

1.1.1 Applicable Equipment

Life Safety equipment includes: fire protection and suppression equipment; fire detection and alarm equipment; smoke evacuation/pressurization equipment; emergency lighting and emergency communications equipment. **It is imperative that any impaired systems are returned to their normal operating condition, and tested, at the end of each impairment.**

2 RESPONSIBILITIES

When dealing with impairments to safety equipment in occupied campus buildings, life safety must be the primary consideration. Any impairment to life safety equipment means that the safety of the occupants of the building may be at risk. While plans are formed to address the physical system impairment, an assessment of occupant safety must also be made. Based on the size and scope of the impairment, staff from a number of University departments may need to be involved in the planning process.

2.1 Internal Departments

Facilities Management, Environmental Health and Safety, Brown Public Safety, Bio-Med Facilities Planning and Operations, Office of Residential Life and possibly others may have a part in the planning and operational process.

2.2 Governing Bodies

The RI Fire Code requires that the AHJ (Authority Having Jurisdiction) must be notified in the event of a major life safety equipment impairment lasting longer than 4 hours. For Brown University, the AHJ would be a member of the Providence Fire Department Fire Prevention Office, the State Fire Marshal, or building inspectors. Communication between University departments and departmental personnel will be a key component of the risk mitigation process. It is expected that personnel managing safety equipment impairments will use good judgment and take all applicable factors into consideration. This document will provide some specific guidelines for managing life safety system impairments.

2.3 Coordination

For emergency impairments the NIMS Incident Command Structure (ICS) provides a scalable framework for managing emergency incidents of all sizes. Planned impairments are a way to practice for emergency impairments, and small incidents provide opportunities to practice for larger incidents. Coordination and good communications are imperative to the success of this program. Facilities Management, Public Safety and Environmental Health & Safety must ensure that all applicable portions of this program are understood by management, as well as the end user.

3 GENERAL PROCEDURES

Impairment of a life safety system may occur because of an emergency event (fire, flood, etc.), accidental damage, the failure of a utility, a planned building renovation or alteration, new construction or emergency system maintenance. Those involved in the impairment should first look for ways to reduce the time of the impairment or find alternatives that will eliminate the need for the impairment process. If possible, plan the impairment when the area or building is not occupied.

3.1 Impairment Management

The first goal of impairment management should be to establish clear lines of responsibility for managing the impairment. Based on the procedures established in this policy, a person shall be designated as the Responsible Person (see Definitions- Section 9), and that person shall be responsible for seeing that policies and procedures are followed with regards to:

- Making the area of the impairment safe and reduce risk.
- Ensuring necessary precautions are taken for the duration of the impairment.
- Making proper notifications to appropriate departments and outside agencies.
- Notifying the appropriate department(s) if there is a need for a fire watch.
- Managing the work of “Authorized Persons” who will perform work to resolve the impairment.
- Confirming the restoration and testing of all systems to normal working order, and making appropriate notifications that the systems have been restored.

3.2 Identifying and Assigning a Responsible Person

The identity of the Responsible Person may vary depending on the circumstances of the impairment. This policy will establish criteria to make the selection of the Responsible Person clear however, in some cases, the scope of the impairment may change over time, so the selection process should be scalable (not unlike the selection of an Incident Commander in an emergency managed using the Incident Command System). The identity of the Responsible Person may change based on the size, impact, and estimated time needed to resolve the impairment. In most cases the Responsible Person will be someone with the following job title/descriptions:

- Construction Manager
- Project Manager
- Manager of Contract Services
- Facilities Management Operation Supervisor/Manager
- Property Management Firm (for buildings not managed by Facilities Management)

3.2.1 Requirements of the Responsible Person

The Responsible Person shall be a Brown University staff member in most instances. Since the operation, maintenance and repair of life safety systems are generally governed by provisions of the fire code, the Responsible Person must be a representative of the building owner. While the Responsible Person may delegate some specific tasks to another person or group (a contractor for example), responsibility for safety must rest with a representative of the University.

3.2.2 Delegation of Authority

The Responsible Person may designate the actual impairment task to a contractor, supervisor, superintendent or foreman for on-sight supervision and general oversight of the impairment and the restoral of impaired systems. The designee shall be responsible for ensuring that policy, procedures and required notifications are enforced.

3.2.3 Authority of the Responsible Person

The Responsible Person shall have the authority to assign qualified staff or contractors to perform work on life safety systems and the means to procure adequate equipment and supplies to resolve the impairment.

3.2.4 Authorized Person

An Authorized Person is the individual who is authorized to perform the actual impairment such as closing a sprinkler valve or working on a fire alarm system. The Authorized Person shall have the knowledge, expertise and the license required to perform the functions associated with the impairment.

3.3 Risk Assessment

As part of the impairment management, the stakeholders from each participating department should understand all of the risks involved prior to the impairment; and re-assess these risks during the impairment until all systems are restored. The Responsible Person may contact the Fire Safety Office to assist in evaluating the risks associated with the impairment.

It is important to understand the extent of the impairment. Example: Some buildings have standpipes that are independent of the sprinkler zones and others have them combined. This needs to be examined and understood prior to a fire protection shutdown. The risk assessment should consider the following:

- Identify all the systems impacted by the impairment.
- Sections of the building affected (boundaries).
- Occupancy of the building.
- Is egress affected?
- Improper storage of combustible materials and/or heavy fire load.
- Are standpipes available?

4 PLANNED IMPAIRMENTS

Planned impairments are typically initiated as part of a construction project, renovation or scheduled upgrade. These planned activities are either project or operational impairments.

When impairments are associated with routine maintenance repairs and testing activities, the Responsible Person is typically the Manager of Contract Services or the Supervisor of the Facilities Management Division managing the work.

Scheduled testing and maintenance are not considered impairments provided that the equipment is constantly attended, and the equipment can be restored quickly.

For an impairment associated with a University project, the duties of the Responsible Person will typically be the responsibility of the Brown Project Manager or the Brown Construction Manager. In addition to the requirements of this program the Responsible Person must also utilize the Brown University Utility and Critical System Outage Planning Flow Chart:

https://brown.edu/Facilities/Facilities_Management/docs/CSI/01/17/01_17_92.pdf

And the associated Outage Checklist (OCL):

https://www.brown.edu/Facilities/Facilities.../docs/.../01_17_91.pdf

4.1 Planned Impairment Notifications

Upon assignment of duties as the Responsible Person, he or she shall make the proper notifications to all of the necessary stakeholders as further outlined in this section.

4.1.1 Primary Notifications for Planned Impairments

An Authorized Person performing work on the life safety equipment shall notify the appropriate Responsible Person of the location of any portion of a life safety system to be impaired and the related information. The Responsible Person will notify the appropriate University departments and staff. Departments requiring primary notification include:

- Environmental Health & Safety's Fire Safety Office (FSO)
- Facilities Management Service Response (FMSR)
- Department of Public Safety Communications Center (DPSCC)
- The Authorized Person shall be responsible for notifying the FSO just prior to the impairment and immediately upon restoration. Long term or daily, re-occurring

impairment notification can be achieved with a detailed notice or written schedule. The site foreman can assume this responsibility.

4.1.2 Secondary Notifications for Planned Impairments

Secondary notification will typically be made by the departmental representatives who were contacted directly by the Responsible Person. These three contacts are responsible for making additional notifications about the impairments as outlined below:

- The FSO will notify the Providence Fire Department and FM Global (insurance carrier) as required by this program.
- FMSR will notify Building/Department Managers, Building Occupants and Residential Life as required by this program.
- Upon proper notification, the DPSCC will coordinate the necessary staffing to perform fire watches as required by this program.

4.1.3 Occupant Notification

When work occurs on a fire safety system in an occupied building, the building occupants must be made aware of impairments that could affect their safety and their plans to respond to an emergency. Occupants need clear and concise information that explains the equipment and location involved in the impairment and how long it is expected to last. Additionally, occupants will need to be provided with specific instructions for reporting a fire and for notifying others in the building of the emergency if the impairment impacts the normal operation of the fire alarm system.

The Responsible Person must not only be proactive in drafting concise, accurate and useful emergency notification for building occupants, he or she must also confirm that the message is conveyed to the people affected using multiple communication methods (emails, printed postings, and personal communication with occupants). Facilities Management Service Response and the Fire Safety Office may be able to provide additional support.

4.2 Planned Impairment Request

The Responsible Person or his designee shall request the impairment and provide detailed information to the Fire Safety Office. All of the impairments in a particular area or building shall be included. Required information includes:

- Building name and address
- Occupancy type (residential, business, assembly, etc.) and number of floors
- Impairment Type
- Impairment description including the rationale for the impairment
- Listing of equipment that will remain functional (if partial impairment) (standpipes, fire alarm, sprinkler)
- Equipment description (fire alarm detection loop, notification loop, sprinkler zone)
- The location where the impairment will take place
- Areas within building that will be impaired
- Responsible Person and cell phone number
- Authorized Person and cell phone number
- Planned start date, time and duration of impairment
- Determine if a fire watch is required. (See section 6.2)

4.2.1 Impairment Request Form

The Impairment Request Form is available by emailing a request to the Fire Safety Office at fire_safety@brown.edu. The completed form shall be emailed back to at fire_safety@brown.edu two business days (forty-eight) hours prior to the planned impairment. The form is an Excel document and should be filled out electronically, whenever possible.

Only the top half of the request form needs to be completed prior to submission. All of the applicable white spaces should be filled in.

The Fire Safety Office will review and complete the form, if approved. Otherwise, further information may be requested prior to approval. Upon approval of the request the Fire Safety Office will process the request and reply to the Responsible Person, if approved, with permission to proceed. An approved permit will include a valid control number.

The Responsible Person must not allow an impairment to begin until permission to proceed and valid control number has been communicated (verbally or in-writing) from the Fire Safety Office.

The approved Impairment Request form can be picked up at the Fire Safety office or emailed back to the applicant.

4.2.2 Field Impairment Permit

The second sheet of the document is the Field Impairment Permit. This is automatically populated from the request form. It will be completed and attached to the impairment request.

The Field Impairment Permit shall be visibly located at the closed valve(s) or other designated location. The Field Impairment Permit must be signed and dated at the bottom by the Authorized Person once the system is restored. See Section 7 for instructions related to completion, closeout and return of the permit.

Examples of the Impairment Request Form and the Field Impairment Permit are below:

4.2.3 Request Form Example

IMPAIRMENT REQUEST FORM
BROWN UNIVERSITY FIRE SAFETY OFFICE

Today's Date:	5/2/17	Impairment Date:	5/6/17	FSO Control #	170506-R1
Building Name:	BOB	Building Address:	164 Angell St	Occupancy Type:	Business
				Number of Floors:	6
Building Occupied?	Yes or No	Yes	Impairment Type		
			Sprinkler	Standpipe	Fire Alarm
			Fire Pump	Other (Describe)	
FA Box #	644	<small>Mark with X to all that apply</small>	x		
Start Time:	0700	End Time:	1100	Estimated End Date:	5/6/17
Reason for Impairment:	Remove and replace existing branch line				
Impairment Location:	<i>What portion(s) of the building will be impaired? Be specific</i>				
	Entire 3rd floor				
Impairment Point:	<i>Where is the impairment created? Valve location, valve number, fire alarm loop, etc.</i>				
	3rd floor stair, west, valve 003				
Brown Project or Construction Mngr:	John Brown			Contact #	863-0000
Responsible Person:	Joe Contractor	Company:	ACME	Contact #	555-5555
Authorized Person:	Jim Subcontractor	Company:	Jim's Sprinkler	Contact #	508-888-8888
Additional Comments:	Standpipe active				
FSO OFFICE USE ONLY					
Main Campus Index #	15371.50 <input checked="" type="checkbox"/>	Jewelry Dist.	15558.17 <input type="checkbox"/>	10 Park Lane	15367.51 <input type="checkbox"/>
Fire Safety Notified	Date:	5/2/17	Time:	1000	By: Joe Contractor
Fire Watch Required?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Responsible Person Notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Permit Approved?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	By:	PC	Date: 5/3/17
Comments:					
Out of Service	By: _____	FMG Notified Time:	_____	PFD Notified Time:	_____
			888-606-4570		274-3347
Back in Service	By: _____	FMG Notified Time:	_____	PFD Notified Time:	_____
Other Notifications:					
EMAIL COMPLETED REQUEST TO: fire_safety@brown.edu					
					RedTag3/8/17pc

Impairment Request Example.xlsx-30-16.pc

4.2.4 Field Permit Example

BROWN UNIVERSITY FIELD IMPAIRMENT PERMIT			
PLEASE PRINT			
Control # (from FSO)	170506-R1	Fire Alarm Box #	644
BUILDING INFORMATION			
Building Name:	Building Address:		
BOB	164 Angell St		
Occupancy Type:		Number of Floors:	
Business		6	
Building Occupied? Yes or No:	Yes		
IMPAIRMENT INFORMATION			
Impairment Type: Other (describe):	0		
Sprinkler	Standpipe	Fire Alarm	Fire Pump
x	0	0	0
Start Date:	5/6/17	Est. End Date	5/6/17
Start Time:	0700	Est. End Time	1100
Reason for Impairment:	Remove and replace existing branch line		
Impairment Location:	What portion(s) of the building will be impaired?		
	Entire 3rd floor		
Impairment Point:	Where is the impairment created? Valve location, valve number, fire alarm loop, etc.		
	3rd floor stair, west, valve 003		
CONTACT/NOTIFICATION INFORMATION			
- The PM or CM shall be a Brown employee. - The Responsible Person can be the PM, CM, Supervisor or General Contractor responsible for project oversight. - The Authorized Person performs the actual impairment.			
Brown PM or CM:	John Brown	Contact #	863-0000
Responsible Person :	Joe Contractor	Contact #	555-5555
		Company:	ACME
Authorized Person:	Jim Subcontractor	Contact #	508-888-8888
		Company:	Jim's Sprinkler
Approved by Brown Fire Safety Officer (FSO):	PC		
System restored and FSO notified:	Date:	Time:	
Completed By:			

BROWN UNIVERSITY FIELD IMPAIRMENT PERMIT			
PLEASE PRINT			
Control # (from FSO)	170506-R1	Fire Alarm Box #	644
BUILDING INFORMATION			
Building Name:	Building Address:		
BOB	164 Angell St		
Occupancy Type:		Number of Floors:	
Business		6	
Building Occupied? Yes or No:	Yes		
IMPAIRMENT INFORMATION			
Impairment Type: Other (describe):	0		
Sprinkler	Standpipe	Fire Alarm	Fire Pump
x	0	0	0
Start Date:	5/6/17	Est. End Date	5/6/17
Start Time:	0700	Est. End Time	1100
Reason for Impairment:	Remove and replace existing branch line		
Impairment Location:	What portion(s) of the building will be impaired?		
	Entire 3rd floor		
Impairment Point:	Where is the impairment created? Valve location, valve number, fire alarm loop, etc.		
	3rd floor stair, west, valve 003		
CONTACT/NOTIFICATION INFORMATION			
- The PM or CM shall be a Brown employee. - The Responsible Person can be the PM, CM, Supervisor or General Contractor responsible for project oversight. - The Authorized Person performs the actual impairment.			
Brown PM or CM:	John Brown	Contact #	863-0000
Responsible Person :	Joe Contractor	Contact #	555-5555
		Company:	ACME
Authorized Person:	Jim Subcontractor	Contact #	508-888-8888
		Company:	Jim's Sprinkler
Approved by Brown Fire Safety Officer (FSO):	PC		
System restored and FSO notified:	Date:	Time:	
Completed By:			

RadTag3/8/17pc

Impairment Request Example.xls/3/2017pc

4.3 Planned Impairment Implementation

In coordination with all of the stakeholders the Responsible Person must form a plan to implement the impairment with the minimal amount of risk and document the associated risk mitigation procedures such as notifications, fire watch, and additional protection as described further in this program. The Responsible Person will give approval to proceed with work based upon a risk assessment of the outage and precautions put in place.

If the scope of work or the schedule of the impairment changes the Responsible Person must notify all stakeholders immediately.

5 EMERGENCY IMPAIRMENTS

In the case of an Emergency Impairment, the responsibilities of the Responsible Person shall be assigned to a Facilities Management representative on the scene of the impairment. Emergency impairments are usually the result of an immediate equipment failure or system activation that requires immediate attention. If the incident is large or complex the use of the incident command structure to manage the event may be necessary.

5.1 Emergency Impairment Risk Assessment

Since emergency impairments are not planned, it is imperative that a risk assessment be performed immediately to determine the risk to the occupants, the extent of the impairment, and the resources needed to correct the impairment.

5.2 Emergency Impairment Notifications

Upon assignment of duties as the Responsible Person, he or she shall make the proper notifications to all of the necessary stakeholders as further outlined in this section.

5.2.1 Primary Notifications for Emergency Impairments

An Authorized Person performing work on the life safety equipment shall notify the appropriate Responsible Person of the location of any portion of a life safety system to be impaired and the related information. The Responsible Person will notify the appropriate University departments and staff. Departments requiring primary notification include:

- Facilities Management Service Response (FMSR)
- Department of Public Safety Communications Center (DPSCC)
- Fire Safety Office
- Building management

5.2.2 Secondary Notifications for Emergency Impairments

Secondary notification will typically be made by the departmental representatives who were contacted directly by the Responsible Person. These three contacts are responsible for making additional notifications about the impairments as outlined below.

- FMSR will notify Building/Department Managers, Building Occupants and Residential Life as required by this program.
- The DPSCC will coordinate the necessary staffing to perform fire watches as required by this program.
- DPSCC will also need to contact the Environmental Health & Safety's Fire Safety Office (FSO) on-call phone number to inform them of the impairment during off hours.
- The FSO will notify the Providence Fire Department and FM Global (insurance carrier) as required by this program.

5.2.3 Emergency Impairment Information

The Responsible Person shall gather information about the emergency impairment and be able to provide the information to the Fire Safety Office when requested. The following information about the particular area or building shall be included.

- Building name and address
- Occupancy type (residential, business, assembly, etc.) and number of floors
- Impairment Type (Fire alarm, sprinkler, other)
- Impairment description
- Areas within building that will be impaired
- Responsible Person and cell phone number
- Expected duration of impairment
- Recommendation if a fire watch is required

Due to the nature of an emergency impairment the Responsible Person shall provide all of the information that is available about the impairment to the Fire Safety Office. The Responsible Person shall maintain communication with the Fire Safety Office until all of the information is gathered.

5.3 Emergency Impairment Documentation

Building and specific impairment information documentation as described in Section 5.2 shall be recorded and documented as much as possible to help provide an assessment for fire watch and evacuation needs.

6 IMPAIRMENT OPERATIONS & LOGISTICS

There are multiple concerns that must be investigated or addressed prior to the start of any planned impairment. During an emergency impairment these concerns shall be reviewed as soon as possible. This section identifies risks that must be evaluated and addressed by the impairment process.

6.1 Operational and Logistical Requirements

The Responsible Person must review and address following requirements prior to planned impairments:

- Whenever possible, perform the work when the facility or area affected is not occupied.
- Shut down any hazardous processes in the area affected by the impairment.
- Prohibit all hot work in the impaired area of the building.
- Ensure that arrangements for a fire watch are made. Assign and instruct personnel who will serve as a fire watch during the impairment
- Do not allow more than one impairment at a time in the same area, such as fire alarm and sprinkler. If more than one impairment within the same area is necessary due to the scope of work, the Responsible Party must first consult the Fire Safety Office.

The Authorized Person must review and address the following requirements prior to planned impairments:

- Ensure that the staff working on the system are prepared (i.e. equipment, parts and personnel are on hand) before impairing the life safety equipment. This will help to reduce the duration of the impairment.
- Ensure that access to life safety equipment and the fire equipment keys required, are readily available (Sprinkler locks, fire alarm keys, etc.)
- Ensure that those working on the system have a plan for restoring the system as quickly as possible in the event of a fire emergency.
- Standpipes should be made operational as soon as possible. Plan for temporary fire protection as necessary. This may include extra fire extinguishers or charged hose lines.

6.1.1 Fire Pumps

Any impairment to a fire pump will be considered a major impairment. It is important to note that some pumps supply fire protection water pressure to multiple buildings on Brown's campus. Therefore it is important to know and communicate what buildings are supplied by each fire pump that is impaired. Specific building information about fire pumps and generators are available from the Fire Safety Office at fire_safety@brown.edu

6.2 Fire Watch

A fire watch is required by code anytime there is a major impairment that is expected to exceed four (4) hours in a twenty-four (24) hour period. Residential halls impaired for more than two hours may require a fire watch sooner. Additionally, there are other situations when a fire watch is prudent and therefore needed to maintain a safe building. The following section on fire watch determination will describe important factors that determine when the fire watch is needed.

6.2.1 Fire Watch Determination

Not every impairment has the same system impact and therefore the same need for a fire watch. A fire watch must be considered for each impairment using the following considerations. If you answer yes to three or more of the following questions, a dedicated fire watch is required. Please contact the Fire Safety Office if you need further assistance.

- Is the building residential type occupancy?
- Is the impaired area larger than 5000 square feet? (71' x 71')
- Are one or more full sprinkler zones affected?

- Are one or more fire alarm detection or notification loops, or 6 or more devices affected?
- Will the impairment last four or more hours? Or two hours for residential halls?
- Is the building occupied?
- Are there above normal hazards such as storage of combustibles or flammables?
- Has egress been reduced or eliminated?

Additionally, the need for a fire watch may be communicated by the Providence Fire Department on the scene of an incident to which they have responded.

6.2.2 Types of Fire Watch

There are typically three different levels of fire watch activities that the University enacts:

- Internal Fire Watch – This is for minor impairments of short duration or low risk due to the occupancy type and can consist of electronic notices, signage and verbal communications to building occupants who would act as their own fire watch. Contractors may use their own, trained staff for hot work fire watches, only.
- DPS Fire Watch – This can be for any duration dependent on the size and extent of impairments in occupied buildings. DPS will coordinate staff and patrol the area(s) as necessary.
- Providence Fire Department – PFD is notified for major impairments exceeding four hours in duration. Depending on availability, occupancy and building type, the Providence Fire Dept. may (or may not) choose to be involved in the fire watch.

Any of these methods may be combined, depending on need and risk, to achieve a safe level of oversight and risk reduction.

6.2.3 Fire Watch Notification

When a fire watch is necessary the Responsible Person shall contact the Department of Public Safety (as needed). It is the responsibility of the Fire Safety Office to notify Providence Fire Department and FM Global of the impairment and fire watch needs as required.

6.2.4 Fire Watch Responsibilities

If it is determined that a fire watch is necessary for the duration of the impairment then the following must be completed by the on-site staff that is providing the fire watch.

- Provide oversight for all areas of impairment.
- Be familiar with the locations of fire alarm pull boxes and fire extinguishers.
- Fire watch shall be provided with communication equipment suitable for communicating an emergency condition. A cell phone, radio communications, flashlight and bullhorn are tools that may be needed.
- Take action to eliminate dangerous conditions such as the accumulation of combustible materials.
- Be familiar with all fire watch protocols as outlined in this document.
- Do not allow hot work during the impairment.
- Keep egress paths open and clear and exit doors are operational.

7 IMPAIRMENT CLOSEOUT AND COMPLETION

It is imperative that the impairment close out be completed and documented. At the completion of work, the Responsible Person shall ensure that:

- The specific impairment(s) are corrected
 - For all sprinkler and suppression impairments:
 - All damaged or broken sprinkler heads shall be replaced with like unit.
 - A 2" main drain test is performed.
 - All fire protection valves are reopened and locked in the full open position.
 - For fire alarm systems:
 - The fire alarm system is returned to normal condition.
 - No trouble or supervisory signals exist.
 - At least 10% of the impaired portion of the system is tested if any changes occur to the system or programming.
 - All other safety equipment has been restored to normal operating conditions.
 - All other required testing has been performed and documented.
 - **Appropriate notifications have been made to all concerned parties that the impairment has ended, including DPSCC and Fire Safety.**
 - Complete sign off at bottom of the Field Impairment form and return to the FSO through inter-office mail at Box 1914, or return it to the FSO drop box located in the main lobby at Facilities Maintenance located at 295 Lloyd Ave.
 - University records have been updated to reflect any changes in fire or life safety systems.
-

8 EMERGENCY PREPAREDNESS

In the case of an emergency (police/fire/medical) during any impairment work, call 401-863-4111 immediately and activate the building fire alarm for evacuation, if applicable.

8.1 Emergency Action Plan

The Emergency Action Plan provides procedures for building evacuation, reporting emergencies, locating emergency evacuation locations, personnel accountability, fire extinguisher types and instructions for use, shelter-in-place, emergency communications and building specific information. For more information on the Emergency Action Plan, refer to the following URL: http://www.brown.edu/Administration/EHS/fire/eap_splash.html

9 DEFINITIONS

AHJ – The Authority Having Jurisdiction or the AHJ may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the AHJ.

Authorized Person – A person who by the nature of his or her job, implicit training and skills, has been authorized to initiate an impairment and work on life safety equipment.

Any person who performs work on fire alarm equipment or sprinkler equipment must be licensed by the State of Rhode Island to perform such work.

Fire Watch – A temporary set of measures intended to ensure continuous and systematic surveillance of a building, or portion of a building, by one or more qualified individuals for the purpose of identifying and controlling fire hazards, detecting early signs of unwanted fire, initiating an alarm of fire, and notifying the fire department.

Hot Work – Any temporary operation involving open flames, or which produces heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing, Welding and the use of Heat Guns.

Impairment – An impairment is an abnormal condition in which a system, component or function is out of order and the condition can result in the system or unit not functioning as required. The impairment may be due to an accident, vandalism, service or repair, (such as closing a valve or disabling an initiating device), or the impairment might be caused by a deficiency in a piece of equipment or subsystem.

- Planned Impairment - A Planned Impairment is an abnormal condition in which a system, component or function is out of service due to work that has been planned in advance. Examples of a planned impairment include the replacement of a sprinkler valve or the addition of a fire alarm device. Planned impairments are typically scheduled during construction phases, renovations or upgrades.
- Emergency Impairment – An abnormal condition in which a system, component or function is out of service due to an emergency condition. Examples may include such things as broken or frozen sprinkler pipe, electronic failure of a portion of the fire alarm system or a utility failure.
- Minor Impairment - An impairment to a single life safety system, confined to a small area of a building, with minimal impact to life safety in the event of an emergency. Examples include individual or small amounts of fire alarm or sprinkler devices or a fire pump off for service or testing, but available for quick restoration.
- Major Impairment – An impairment that could impact the safety of building occupants in the event of an emergency in a building. Examples include an entire fire alarm zone, panel or notification circuit, a full sprinkler zone or related water supply. A fire pump down due to loss of power, repairs or failure is a major impairment.

Life Safety Equipment – Equipment designed and installed to protect life and property inside a building. Life safety equipment includes:

- Sprinklers systems including standpipes, fire pumps and controllers
- Fixed suppression systems, kitchen suppression systems, Ansul, FM200, Halon, etc.
- Fire Detection and Notification Equipment (fire alarm systems), Fire Communications Systems (systems that transmit alarm information to people or agencies in remote locations)
- Emergency Lighting and Emergency Power.
- Smoke control systems
- Rated assemblies such as fire door assemblies, rated fire and smoke barriers, and other passive protection

Notification – The process of alerting occupants, appropriate individuals, and agencies to the presence of a life safety impairment. Also, the activation of a fire alarm system provides evacuation notification.

Responsible Person – The person who is responsible for the oversight, scheduling, notification and implementation of the impairment process.

10 REGULATORY INFORMATION

Brown is subject to comply with a variety of environmental, health & safety regulatory requirements. This program is intended to provide the community with the information to comply with these requirements. Specific requirements may be specifically addressed within other EHS programs referenced within this document. Please refer to those programs for more information.

11 REFERENCES

- NFPA 1 – Uniform Fire Code, 2012 Edition and its Amendments, as adopted by the State of R.I.
 - NFPA 13 – Standard for the Installation of Sprinkler Systems, 2010 Edition
 - NFPA 14 – Standard for the Installation of Standpipe and Hose Systems, 2010 Edition
 - NFPA 25 – Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2011 Edition
 - NFPA 51B – Standard for Fire Prevention During Welding, Cutting and Other Hot Work, 2009 Edition
 - NFPA 72 – National Fire Alarm and Signaling Code, 2010 Edition
 - NFPA 92 – Standard for Smoke Control Systems, 2012 Edition
 - NFPA 101 – Life Safety Code, 2012 Edition
 - NFPA 241 – Standard for Safeguarding Construction, Alteration, and Demolition Operations, 2009 Edition
 - NFPA 601 – Standard for Security Services in Fire Loss Prevention, 2010 Edition
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12 REVISION HISTORY

February 23, 2017

13 DOCUMENT LINKS & CONTACT INFORMATION

Impairment Request Form:

[Link Needed](#)

Life Safety System Impairments & Hot Work Guide:

[Link Needed](#)

Fire Safety Office Website:

<https://www.brown.edu/about/administration/environmental-health-safety/index.php?q=topics/fire-safety>

Emergency Action Plan:

http://www.brown.edu/Administration/EHS/fire/eap_splash.html

Brown University Utility and Critical System Outage Planning Flow Chart:

https://brown.edu/Facilities/Facilities_Management/docs/CSI/01/17/01_17_92.pdf

Outage Checklist (OCL):

https://www.brown.edu/Facilities/Facilities.../docs/.../01_17_91.pdf

13.1 Contact Information

Fire Safety Office

Email: fire_safety@brown.edu

Office: (401) 863-3462

Fax: (401) 863-3417

Off Hours- Contact DPSCC, below

Department of Public Safety Communications Center (DPSCC):

(401) 863 3322

Facilities Management Service Response (FMSR):

(401) 863-7800