

RiskTopics

Management Practices: Fire Protection Impairments November 2015

When business capital is invested in fire protection, it is difficult to explain any fire protection outage that allows a fire to grow unchecked and impact operations. After all, the investment was intended to provide prompt fire detection, minimize physical damage, and reduce impacts to business.

Introduction

Over time, any fire protection system will be taken out of service for renovations, expansions, or repairs. When these outages occur, a responsible impairment management procedure is essential. The impairment procedures should:

- Minimize the impairment extent
- Minimize the impairment duration
- Minimize the potential sources of fire

This document highlights the property conservation responsibilities of those who manage fire protection impairments. Additional responsibilities beyond property protection are outside the scope of this document.

Discussion

The Zurich Fire Protection Impairment Program was developed to support customer efforts managing fire system outages. The program is intended to safeguard investments in fixed fire protection by verifying fixed fire protection system outages are:

- Limited to the smallest area possible
- Limited to the shortest duration possible
- Accompanied by appropriate precautions



This guide will explain:

- How to implement an impairment program
- How to manage impairments
- How to report impairments to Zurich

What is an impairment?

A fire protection impairment is the shutdown of any fixed fire protection system including:

- Automatic sprinklers
- Underground fire mains
- Fire hydrants
- Fire pumps
- Fire protection water storage tanks, cisterns, or reservoirs
- Public water systems supplying fire hydrants or fire systems
- Special fire extinguishing systems (e.g. foam, carbon dioxide, FM200, dry chemical, or wet chemical)
- Fire alarm systems

What are the three types of impairments?

Planned impairments

A planned impairment occurs when all or part of a fire protection system is shut down for activities such as maintenance, renovation or construction. These are scheduled events that allow for careful planning. The needed materials and personnel to expedite the outage should be on site before any work begins. All appropriate precautions should be implemented before and during the outage. For planned impairments, provide notification to Zurich before work begins.

Emergency impairments

An emergency impairment occurs when an accident or unforeseen event leads to an unplanned fire system outage. Protection must be shutdown suddenly. Having an established impairment program in place will help manage these unexpected situations. For emergency impairments, summon appropriate aid, control the emergency, establish appropriate precautions, and notify Zurich once the emergency is under control.

Hidden impairment

A hidden impairment is a fire system outage that exists without the knowledge of those responsible to keep fire protection systems in service. A hidden impairment may occur as a result of a system fault or failure, an



unintended action by unauthorized personnel, or a malicious act. Hidden impairments are often discovered through periodic fire system inspections or testing.

Why should impairments be reported to Zurich?

Reporting impairments allows Zurich to:

- Understand the magnitude of an outage and the degree of increased risk presented by an outage
- Review precautions and offer guidance on additional precautions
- Provide follow-up and reminders of outages that should be back in service

Impairments can be reported to Zurich using our online system (see Appendix).

Guidance

Establish a formal impairment program. For all impairments – whether planned, emergency, or hidden – include actions to implement appropriate precautions and to report impairments to Zurich.

Establish an impairment program

Establish a written impairment program using a format similar to other management directed programs used at the location or within the organization.

Clearly convey management’s expectations that the supervision of impairments include:

- Appropriate precautions
- Reporting to Zurich

Impairments can be reported to Zurich using our online system (see Appendix).

Impairment precautions

Precautions include actions to consider before work begins on a planned impairment as well as action to consider while work is underway on any impairment. Additional precautions are needed to address emergency and hidden impairments as they are not planned.

Precautions before work begins – Measures for planned impairments

1. Eliminate ignition sources. For example:
 - a) Prohibit hot work such as cutting and welding in the impaired area.
 - b) Prohibit smoking in the impaired area.
2. Control combustible and hazardous materials
 - a) Plan work during idle hours.
 - b) Shut down hazardous processes and verify good housekeeping in the impaired area.



3. Issue Fire System Work Permits

- a) Notify Zurich of the impairment using our online system. Print your impairment notification record to serve as the Fire System Work Permit (see Appendix).
- b) Notify others as appropriate such as the fire alarm company or public fire service. Also notify others such as building owners or building tenants who may be affected by the impairment.
- c) Attach the permit to the impaired fire protection equipment.
- d) Use a copy of the permit, or other effective means, as an outage follow-up reminder.

4. Allow for prompt fire detection

- a) Provide a continuous fire watch in the impaired area.

5. Allow for prompt human intervention

- a) Verify portable fire extinguishers or small hoses are available in the impaired area.
- b) Station a fire watch in the impaired areas.
- c) Station someone at or near closed sprinkler control valves. They should be prepared to quickly reopen the valve if fire is discovered.
- d) Equip the fire watch with means to quickly report fires to appropriate authorities.

6. Plan to limit impairment extent

- a) For automatic sprinklers, consider capping or plugging piping so that as much of the system as possible can be placed back in service during the outage.
- b) For underground fire mains, use sectional control valves to limit the impact of the outage.



7. Plan temporary protection

- a) Back feed main drains at impaired systems using hoses from unaffected fire hydrants.
- b) Back feed fire department connections at impaired systems using hoses from unaffected fire hydrants.

8. Plan to expedite work

- a) Verify all needed tools, equipment, and materials are in the work area.
- b) Verify all needed workers are available when needed.

9. Reduce potential for unwanted alarm signals

- a) Notify the fire alarm company of the impairment to avoid transmission of unwanted alarms.
- b) Notify the fire brigade or fire department.

Precautions after work begins – all impairments

1. Expedite the work
 - a) Work continuously until done.
2. Limit impairment duration
 - a) Restore protection during any extended idle periods such as overnight or over weekends.
 - b) For major renovations where combustibles will not be present, cap sprinkler piping in the work area and restore protection in all surrounding areas.

Precautions for emergency impairments – Additional measures

1. Manage the emergency
 - a) Summon appropriate emergency resources to control the emergency.
 - b) Isolate operating fire systems once the emergency is controlled.
2. Manage the impairments
 - a) Identify the extent of the impairment(s).
 - b) Post a fire watch in all impaired areas.
 - c) Take action to limit the extent of the impairment(s).
 - d) Take action to limit the duration of the impairment(s).
 - e) Review and implement appropriate measures from the **Precautions before work begins**.
 - f) Notify Zurich of the impairment using our online system. Print your impairment notification record to serve as the Fire System Work Permit (see Appendix).
 - g) Attach the permit to the impaired fire protection equipment.

Precautions for hidden impairments – Additional measures

1. Manage the impairment
 - a) Immediately assess the condition of the impaired system.
 - b) Work continuously to restore it to full service as quickly as possible.
 - c) Review and implement appropriate measures from the Precautions before work begins.
 - d) Notify Zurich of the impairment using our online system (see Appendix).
2. Investigate the cause
 - a) Investigate to identify the time, date, and cause of the hidden impairment.
 - b) Discuss all findings with your Zurich Account Team.
 - c) Consider actions to reduce the potential for similar future occurrences.

Restoration – Measures once the impairment is back in service

1. The impairment authorizer verifies the impairment is restored.
2. Zurich is notified of the impairment restoration (see Appendix).
3. Others, such as the fire alarm company or public fire service, are notified of the restoration.
4. The impairment notification and restoration records are filed.

Impairment reporting to Zurich

Report all impairments to fixed fire protection to Zurich regardless of extent or duration.

Impairments can be reported to Zurich online (see Appendix).

Conclusion

Protect your investment in fixed fire protection systems. Adopt and implement the Zurich Fire Protection Impairment program; limit the number, extent, and duration of impairments; apply appropriate precautions during impairments; and notify Zurich of all impairments.

Support is available on our website <https://esolutions.zurichna.com/s3/Impairment-Reporting> and through your Zurich Account Team.

Appendix: Zurich Impairment Notification Online

The Zurich Fire Protection Impairment Program can be accessed for online impairment reporting as shown in the following sequence of steps from either a **mobile device (at the location of the impairment)** or a computer.

Step 1: Go to <https://esolutions.zurichna.com/s3/Impairment-Reporting>

Step 2: Click 'Select another language' at the top of the page, then click on the desired language.



Step 3: Click on the "Next" button at the bottom of the page to continue.

Please report your impairment by clicking the button below.

Instructions: Enter information, click on the 'Next' button, then on the 'Submit' button at the bottom of the form to complete the initial submission process and the restoration process.

Upon submitting the impairment a confirmation will be emailed to you. Please save this email! It will be needed to report the restoration. The email will include a PDF of your notification along with a link back to your impairment record so that it can be updated or closed out.

For best performance: **1)** Please use a current web browser (ie, Internet Explorer 9 or higher); **2)** 'White List' our URL domain so that your firewalls and spam filters do not block our emails; **3)** make sure that TLS is enabled for both inbound and outbound emails; **4)** Do not switch from a mobile device to a computer (or vice-versa) when reporting on the same impairment / restoration notification.

References
[Risk Engineering global website](#)
[Impairment Management Guide](#)
[Impairment Riser Stickers](#)
[Impairment Permit Tag](#)
[Impairment Form](#)
[Impairment System QR Code](#)

Special Assistance

Asia-Pacific	fire.impairment.apac@zurich.com
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Attention: The Zurich Group Companies and SurveyGizmo's software used to operate our fire protection impairment system are located in the US. Zurich has appropriate measures and controls in place to ensure that this data transfer is carried out securely and in compliance with our legal obligations. If you do not care to complete this form, please exit now.

Note: The Reference section includes links to the Zurich Risk Engineering website and this Risktopic document to help support your Fire Protection Impairment program.

In addition, contact information is provided should you have trouble reporting your impairment online.

Step 4: Complete the impairment form. Information is required in fields marked by a *.

Note: Please be aware of the following fields when completing the form:

Contact Information

Name: * <input type="text"/>	Title or Department: * <input type="text"/>
Telephone Number: * <input type="text"/>	Email Address: * <input type="text"/>
Additional Contact Name: * <input type="text"/>	Additional Contact's Email Address: * <input type="text"/>

Confirmation of the impairment will be emailed to both parties.

Provide a back-up contact who is also familiar with the impairment (ie, coworker, manager, person on another shift, etc.)

Location Information

Account/Company Name: * <input type="text"/>	Other Company Name: <input type="text"/>
Street: * <input type="text"/>	City: * <input type="text"/>

Provide other names your company is known as or the building owner's name or contractor's name that is involved with the impairment.

Impairment Information

Type of Impairment: *

-- Please Select --
-- Please Select --
Planned Impairment
Emergency Impairment
Hidden Impairment

Equipment/System Impaired: *

-- Please Select --
-- Please Select --
Alarm System
Smoke or Heat Detectors
Sprinkler System(s)
Fire Pump(s)
Fire Hydrant(s)
Underground Water Main / Valve(s)
Water Supply, Tank or Reservoir
Special Extinguishing System
Power Outage
Other - Please specify below

Reason for Impairment: *

-- Please Select --
-- Please Select --
Testing
Maintenance / Repair
Renovation / Construction
Other - Please specify below

Maintenance/Repair Issue

-- Please Select --
-- Please Select --
Alarm/Detection System Issues
Sprinkler Head Replacement
Sprinkler Waterflow Device
Sprinkler Valve Tamper Switch
Sprinkler Valve
Broken/Damaged Pipe(s)
Frozen Pipe(s)
Fire Pump Alarm(s)
Fire Pump Valve(s)
Fire Pump Failed to Start
Water Supply/Tank Issues
Dry Pipe Valve Tripped
Extinguished Agent Discharged
Other- Please specify below

Precautions Taken: (check all that apply) *

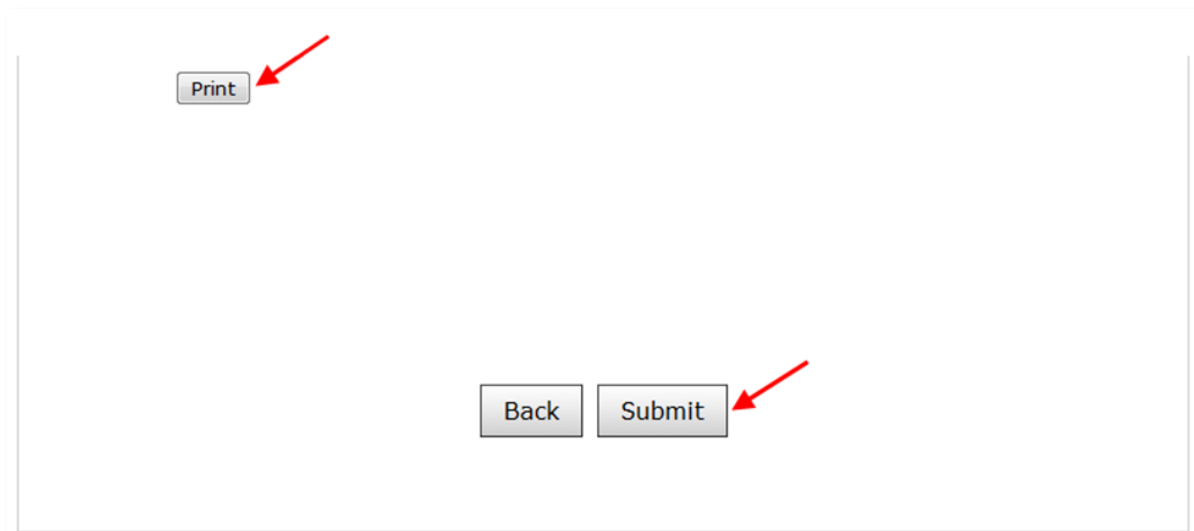
- Hot work prohibited
- Smoking controlled
- Hazardous operations shutdown
- Fire watch provided
- Fire extinguishers / small hoses available
- Alarm monitoring station notified
- Fire department / brigade notified
- Emergency procedures reviewed
- Impairment limited to smallest area possible
- Smoke detection or sprinklers remain in service
- Work preformed during idle period
- Work continuously until protection is restored
- Other - Please specify in comments box below

Step 5: Upon completing the form, the following print options are available:

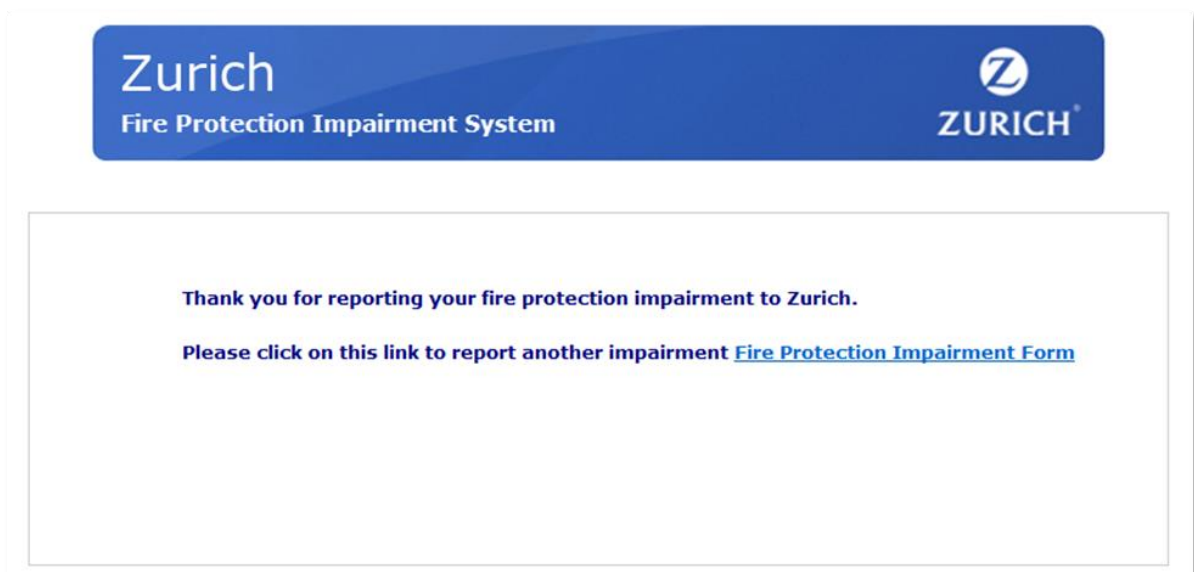
- a) To print the report as shown, go to the Menu Bar at the top of the screen, click on File, then Print.
- b) To print the report on a single page (in English), click on the "Next" button at the bottom of the page to advance to the Preview page, then click on the "print" button.
- c) Wait until the report is emailed to you to print it, as noted below.

If options A or C are selected, click on the "Next" button at the bottom of the page.

To continue, click the "Submit" button at the bottom of the page.



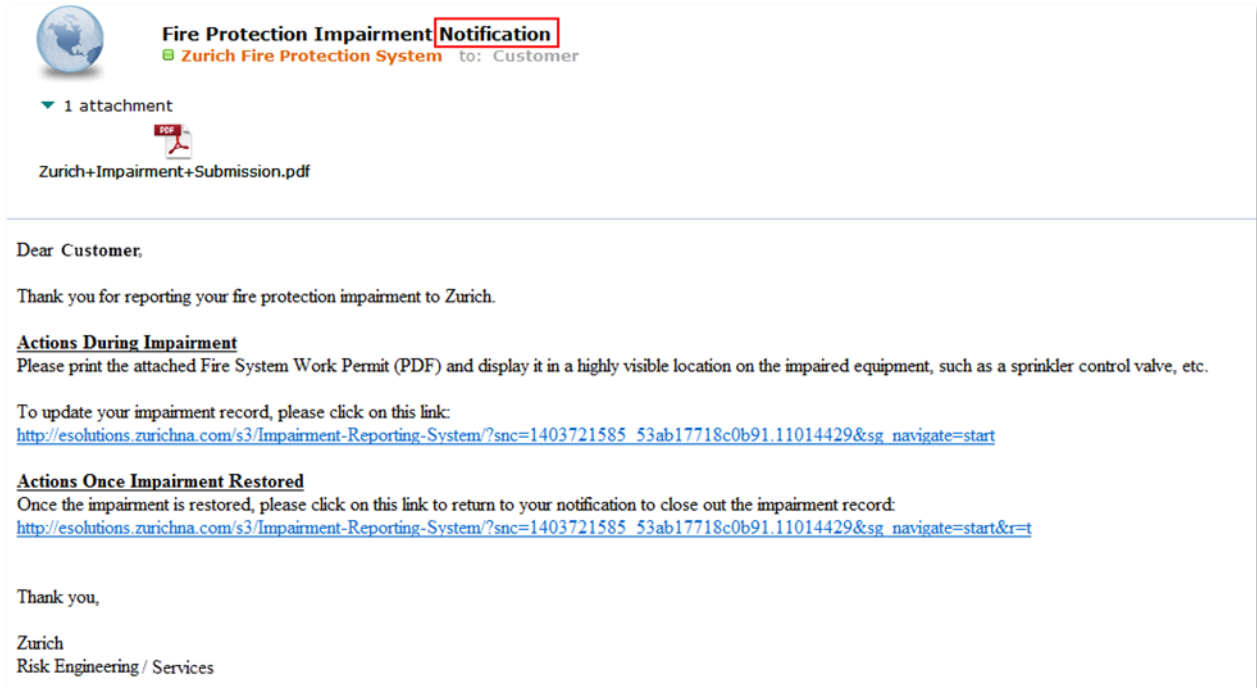
Step 6: A message will appear providing you an opportunity to report another impairment. Exit the system if you are finished.



Step 7: Confirmation of the impairment will be sent to your email address (and the additional contact).

The email will include a PDF of your impairment record, which can serve as the Fire System Work Permit. Print it and place in a protective covering, then attached it to the impaired fire protection equipment.

The email will also include two links to take you back to your impairment record. One link is for updating the impairment record, if needed, (ie, change of date) and the other link is to report the restoration.



Step 8: Once the impairment is restored, use the second link in the confirmation email to return to your impairment record to report the restoration. Enter the information, and then click the "Submit" button at the bottom of the form. Close out of the system if you are finished or click on the link to enter another impairment, as shown in Step 6.



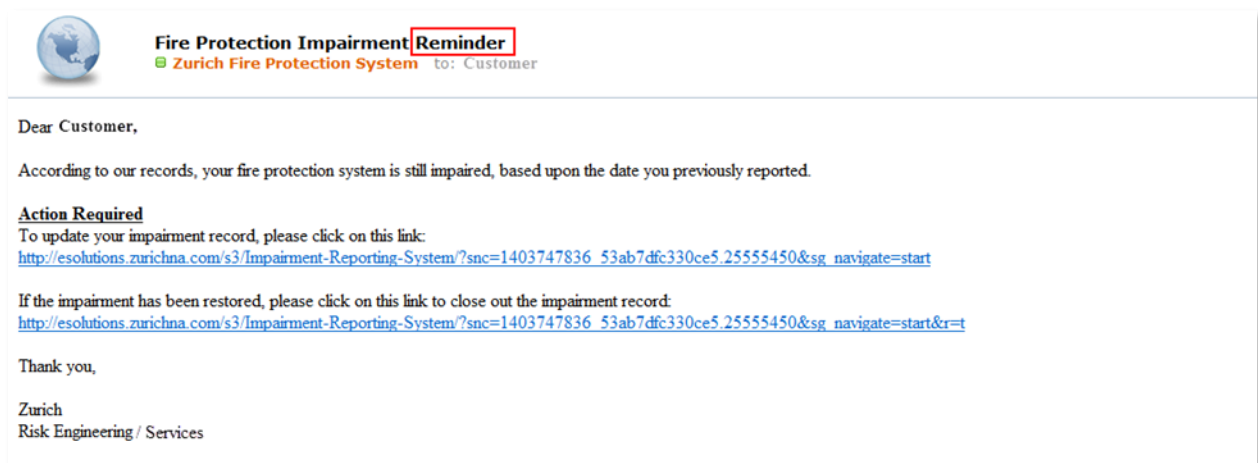
Step 9: Confirmation of the restoration will be sent to your email address (and the additional contact, if provided). The email will include a PDF of your impairment record, which should be saved for future reference.



Step 10: Should the restoration not be reported, a reminder of the impairment will be sent to your email address (and the additional contact) 24 hours after the 'estimated date and time of the restoration' that was recorded in the system.

Estimated Date of Restoration: *	Estimated Time of Restoration: *
<input type="text"/>	<input type="text" value="i.e. 1:00 pm"/>

The email will include two links to take you back to your impairment record. One link is for updating the impairment record (ie, change of date) and the other link is to report the restoration. Once the impairment is restored, follow Steps 8 & 9.



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