Fire Protection Impairment Program

HSB Global Standards
Professional Loss Control

IMPAIRMENT

An impairment of any fire protection system or equipment occurs when that protection system, alarm or detection device is removed from service either partially or completely. This includes planned or emergency outages of the system or devices. The probability of a fire or explosion causing major damage is increased whenever a system, alarm or detection device is impaired. The longer the protection 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 protection system may become impaired for a number of reasons, such as maintenance, renovation, construction, equipment failure or just forgetting to activate the system or device. To assure that the impairment is properly handled, management should have an impairment program implemented as an integral part of the plant's pre-emergency program. Such a program requires several basic steps:

1. ***Assign the responsibility*** *and the authority to control the impairment to one individual. Normally a plant engineer or fire protection and safety supervisor is designated. In an emergency, a shift supervisor or fire brigade chief may have the authority to impair a system, but the overall responsibility of the impairment remains with the assigned individual.*

2. ***Educate plant personnel*** *in basic precautions when a protection system or equipment is impaired.*
   a. *limit the number, scope and duration of impairment(s).*
   b. *notify public fire department at start and finish.*
   c. *shut down any hazardous processes.*
   d. *relocate combustibles away from the area.*
   e. *stop any cutting and welding that would increase the probability of a fire occurrence.*
   f. *supplement manual fire protection with extra extinguishers.*
   g. *provide a continuous fire watch.*
   h. *complete impairment work in a timely manner.*
   i. *restore protection system upon completion of work.*
   j. *verify, by testing, that the protection system is operational.*

3. ***Implement written procedures*** *to be incorporated into the plant pre-emergency program. There are three forms of impairment: planned, emergency and concealed.*

Concealed Impairment

A concealed impairment is an unknown impairment. It occurs when a fire protection system is left out of service or removed from service by an unauthorized person. A concealed impairment is normally discovered during the plant's self-inspection or by a security service.

The concealed impairment can be prevented by:

1. *Establishing procedures to be followed during an outage whether planned or an emergency.*

2. *Assuring that the self-inspection program is performed regularly, promptly and properly. This includes testing of alarms and detection devices. (See "Self Inspection Program" pamphlet.)*

3. *Locking all sprinkler control valves in the appropriate position.*

If a protection system or device is found impaired, the conditions should be immediately reported to the individual responsible for fire protection. This individual should:

1. *Try to determine the reason for the condition.*

2. *Restore the fire protection system if possible.*

3. *Notify HSB Professional Loss Control about the condition found (1-800-472-7819).*

Emergency Impairment

An emergency impairment occurs when an unexpected event impairs the normal function of the protection system. A section of frozen sprinkler piping bursting is an example.

Any emergency situation is normally associated with confusion and a sense of urgency. To help eliminate a major portion of the confusion, a written procedure should be in a location available to all personnel. The procedure should address the following:

1. *Isolate the area where the situation or condition is causing the impairment. If possible, keep the remaining protection system in service. This may require temporary connections (e.g., cross-feed of sprinkler systems by using 2½ inch hose and coupling) or bypassing the system.*

2. *Notify the shift supervisor and the fire brigade chief that an impairment has occurred.*

3. *Secure any hazardous operation in the area where the protection system is impaired.*

4. *Properly "tag out" the impairment system or equipment with a Fire Protection Equipment Out of Service tag. These tags can be obtained by contacting HSB Professional Loss Control by writing to HSB Professional Loss Control, P.O. Box 585, Kingston, TN 37763 or calling 1-800-472-7819.*

5. *Start repairs on the impaired system as soon as the area is secured. Continue to work on the impairment until it has been restored to service. Any welding or cutting required for the repair should be performed in a protected area.*

6. *Place additional portable extinguishers in the impaired area at accessible locations.*

Once the situation is under control and all hazardous conditions have been eliminated, the supervisor in charge should:

1. *Notify the public fire department that an emergency impairment has occurred and that all or part of the protection system is out of service.*

2. *Notify the alarm company that an impairment has occurred and indicate if any of the alarms have been affected.*

3. *Notify HSB Professional Loss Control that an emergency impairment has occurred. (Refer to Impairment Notification Procedures below for details.)*

Planned Impairment

A planned impairment is a scheduled impairment. It is usually an improvement or modification to the present system. Examples include adding a new section of sprinkler piping or changing old sprinklers.

The same considerations and procedures for emergency impairments should be followed for a planned impairment. However, the planned impairment should be organized, thereby reducing the possibility of problems and minimizing the time required for the impairment. If a contractor will be used to work on the protection system or equipment, the contractor should not be allowed to impair the system without authorization

from the plant personnel. In addition, the contractor should be required to follow the plant's safety rules and requirements. This includes obtaining special hazard permits and authorization.

Since the work is planned in advance, the schedule of the impairment can be worked out with the maintenance department and plant operation. This will assure that:

1. *Hazardous processes will be secured prior to the protection system taken out of service.*

2. *Extra precautions have been taken in the area of impairment (see back of tag for some items to consider).*

3. *All necessary parts and materials are available before work is started.*

4. *Outside concerns such as the public fire department and alarm companies are notified in advance that the system will be out of service.*

5. *HSB Professional Loss Control has been notified 48 hours in advance. (Refer to Impairment Notification Procedures below for details).*

HSB Global Standards
Professional Loss Control

FIRE PROTECTION EQUIPMENT OUT OF SERVICE

AUTHORIZED BY (Signature) | DATE SIGNED

Tag No. 7510

2310 5/96

Tag No. 7510

IMPAIRED EQUIPMENT PROTECTION | EQUIPMENT VALUE NUMBER

PROTECTING

ESTIMATE TIME AND DATE SERVICE WILL BE RESTORED | TIME TAKEN OUT OF SERVICE

TIME PUT BACK IN SERVICE | CHECKLIST COMPLETED ☐ YES ☐ NO

TIME AND DATE WHEN INSURANCE COMPANY NOTIFIED | TIME AND DATE WHEN PLANT ENGINEERING NOTIFIED

AUTHORIZED BY (Signature) | DATE SIGNED

2310 5/96

IMPAIRMENT NOTIFICATION

When an emergency impairment occurs or when a concealed impairment is found, immediately notify HSB Professional Loss Control at 1-800-472-7819.

1. *Press 3 to access the Impairment line.*

2. *During normal business hours (8:00 am to 4:00 pm EST) an operator will assist you. Ask to speak with an Impairment Notification Coordinator. After hours, press 3 and leave a message when prompted.*

3. *Provide the following information:*
   a. *your name.*
   b. *your company's name.*
   c. *telephone number.*
   d. *policy and location numbers.*
   e. *type of impairment.*
   f. *what system or equipment is impaired.*
   g. *whether the system is partially or completely impaired.*
   h. *an estimated length of time the system/equipment is to be impaired.*
   i. *what precautions have been established while the impairment exists.*

This phone is available 24 hours a day, 7 days a week to help you maintain a safe operation.

RESTORATION

After completing the work, it is important to assure that the fire protection has been properly restored. Eight steps are required to assure the protection has been restored. Each step should be verified by the individual that authorized the impairment. These steps are:

1. *Open all valves that were secured during the impairment. Remove Fire Protection Equipment Out of Service Tags once valves are confirmed to be open. Verify that the system is properly lined up and valves are open by conducting a drain test. (Note: If during the test the pressure drops below normal, the system may have a restriction or a partially closed valve.)*

2. *Place all alarms or detection devices back into service.*

3. *Restore any fire protection equipment to "automatic" that was secured or placed in "manual".*

4. *Verify that portable extinguishers are in place and are fully charged.*

5. *Notify the plant supervisors (shift and fire brigade chief) that the fire protection system/equipment has been restored.*

6. *Notify the alarm service or central stations that the fire protection has been restored and that the alarms are back in service.*

7. *Notify the public fire department that the fire protection system is restored to service and all alarms have been activated.*

8. *Notify HSB Professional Loss Control immediately by telephone (1-800-472-7819) that the fire protection system has been restored.*

NOTE: Retain the bottom half of the Fire Protection Equipment Out of Service Tag for review by the next visiting Loss Control Representative.

Prompt notification of an impairment is of significant benefit to you and your company. Personnel handling the impairment calls at HSB Professional Loss Control are technical personnel, provided to you to assist in providing a safe facility while the impairment is in progress. They can answer questions and make suggestions as to how to maintain a safe facility while the impairment is being corrected. They are there to help you.

1 (800) 472-7819
24-Hour Impairment Hotline

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Professional Loss Control

Fire Protection Consulting

P.O. Box 585
Kingston, Tennessee 37763