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SERIES L: CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT

Periodic control of fire extinction devices in telecommunication buildings

ITU-T Recommendation L.33

(Previously CCITT Recommendation)

ITU-T L-SERIES RECOMMENDATIONS

CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT

For further details, please refer to ITU-T List of Recommendations.

ITU-T RECOMMENDATION L.33

PERIODIC CONTROL OF FIRE EXTINCTION DEVICES IN TELECOMMUNICATION BUILDINGS

Summary

This Recommendation considers the maintenance and control of fixed installations and portable extinguishers. It describes the procedures for inspection, maintenance and discharge testing of fixed water, CO_2 and Halon 1301 installations, and portable extinguishers.

Source

ITU-T Recommendation L.33 was prepared by ITU-T Study Group 6 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 9th of October 1998.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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PERIODIC CONTROL OF FIRE EXTINCTION DEVICES IN TELECOMMUNICATION BUILDINGS

(Geneva, 1998)

1 Introduction

Once a fire extinction system has been designed and adopted, it becomes the responsibility of the telecommunication enterprise to ensure that it is properly controlled and maintained.

Telecommunication buildings are equipped with two types of fire extinction systems:

– portable extinguishers;

– fixed installations.

One of the key factors in effective fire control, when a fire breaks out, is the proper upkeep and optimal performance of these systems.

Good care and maintenance of fire extinction systems are vital to ensure that they operate properly in an emergency. Without adequate planning and implementation of maintenance programmes, even the best designed systems may fail at the critical moment.

Also to be taken into account is the role played by insurance companies, which carry out periodic inspections of fire extinction systems and whose reports influence the cost of insurance premiums.

2 It is recommended

Methods for the inspection and maintenance of every component of fire extinction systems should be introduced, with a view to guaranteeing their effectiveness in the event of a fire.

Inspection of fire extinction installations should be carried out in compliance with internal policies adopted in that respect by the telecommunication enterprise.

According to inspection schedules and standards, inspections may be carried out:

a) by the enterprise's own specially trained personnel;

b) by specialized companies, which must comply with the requirements laid down by the competent authorities in each country.

2.1 Portable extinguishers

Fire extinguishers should be subjected to inspection, maintenance and refilling procedures designed to ensure their optimal operation in the event of the outbreak of fire. The aim is to ensure that extinguishers are loaded and will operate effectively upon use.

2.1.1 Inspection

A general inspection should be made of the state of fire extinguishers, as well as their accessibility and markings.

This inspection will verify that:

– fire extinguishers are located as indicated in the corresponding plan;

– they are clearly visible;

– access to them is not obstructed;
– they have not been activated, nor are partially or completely empty;
– they have not been handled improperly;
– their containers have not suffered obvious damage;
– service pressures are as required (pressure gauge readings);
– maintenance cycles are observed.

2.1.2 Maintenance

The maintenance procedure should consist in an exhaustive inspection of the three main parts of the fire extinguisher:

– the mechanical part;
– the extinguishing agent;
– the propellant part.

Fire extinguisher maintenance – particularly where hydrostatic testing and reloading is concerned – is a specialized task which must be carried out by trained personnel. Given the importance of this task and the need for reliability in an emergency, we recommend that Administrations contract companies which have proven experience in this activity, have adequate facilities and comply with the regulations in force in each country.

All fire extinguishers should have an attached card showing the expiry dates of the hydrostatic test and extinguishing agent.

In addition to the card, a permanent record, showing the following information, should be kept on file for each fire extinguisher:

a) date of maintenance and name of the person responsible;
b) date of last reloading and name of the person responsible;
c) permanent deformation following hydrostatic testing.

The need to reload fire extinguishers may arise in the course of maintenance.

Reloading consists in topping up or replacing the extinguishing agent and, if necessary, the propellant gas. For this operation, the directions given on the fire extinguisher specification plate must be followed, and only the agents indicated there may be used.

After reloading, pressurized or auto-propelled fire extinguishers must be submitted to a test to check tightness and losses; this test must be accurate enough to ensure at least one year of extinguisher operability.

Seals and instruction labels must then be replaced, as must the security pin which prevents accidental actuation of the extinguisher.

2.1.3 Discharge tests

Owing to possible deterioration, the extinguishing agent needs to be renewed. This procedure consists in discharging the extinguisher, carrying out hydrostatic testing of the container and checking the operation of each of the components.

The frequency of inspections, maintenance and discharge tests should be set by each Administration according to locally prevailing conditions.

2.2 Fixed installations

An inspection and maintenance programme should be established for all devices and equipment forming part of fixed fire extinction installations.

2.2.1 Fixed water installations

2.2.1.1 Installed fire hydrants

Checks should be carried out to ensure that:

– water supply sources are in good repair;

– inlet valves and fixed spigots remain open and secured;

– piping joins present no leaks;

– hoses and valve levers and taps are properly accessible;

– hose cabinets are in good repair;

– hoses are in perfect condition, by unrolling them to check for cuts, bad joins and loose connections;

– all hoses withstand pressures in accordance with national standards, without presenting leaks.

2.2.1.2 Hydrants

The operational condition of all piping, and correct positioning valves, hose nozzles and ancillary items should be checked.

2.2.1.3 Dry rising mains

The nozzles of dry rising mains and their supply intakes should be checked, ensuring that external caps and coupling stopcocks are shut, that connection caps are in good condition and that section stopcocks are open.

2.2.1.4 Sprinklers

Sprinkler systems should be inspected by the supplier company or other specialized company acknowledged by a recognized authority.

It should be checked that sprinkler heads are unobstructed. The testing valve for each sector of the installation areas should be activated, and in each case the correct operation of the other components should be checked.

Periodic testing programmes and reports should be scheduled according to the type and critical level of each component of the system.

2.2.2 CO_2 installations

2.2.2.1 Inspection

– The state of the CO_2 in low and high pressure systems should be checked regularly, as well as immediately after the activation of such systems.

– The whole system should be inspected and all devices checked, with partial discharge if necessary.

– Inspectors should verify whether the risk level or condition of premises have changed.

– Cylinder weights should be checked and cylinders replaced or reloaded if losses are greater than 10%.

2.2.2.2 Tests and maintenance

– Operating tests should be carried out on all system components.

2.2.3 Fixed Halon 1301 installations

In view of the negative impact of Halon 1301 on the environment, it is strongly recommended that Halon 1301 or other CFC components be eliminated from all fire extinction devices.

2.3 Maintenance periods

Maintenance periods for several national standards are given in Appendices I to IV of Recommendation L.23.

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