



Fire Service Professionals Pty Ltd

FIRE SYSTEMS , SERVICE & ALTERATIONS

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# FIRE SYSTEM MAINTENANCE

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# Overview

- Industrial Fire Systems
- Innovations
- Hazardous Areas
- Changes to regulations
- System integration
- Future Trends
- Summary



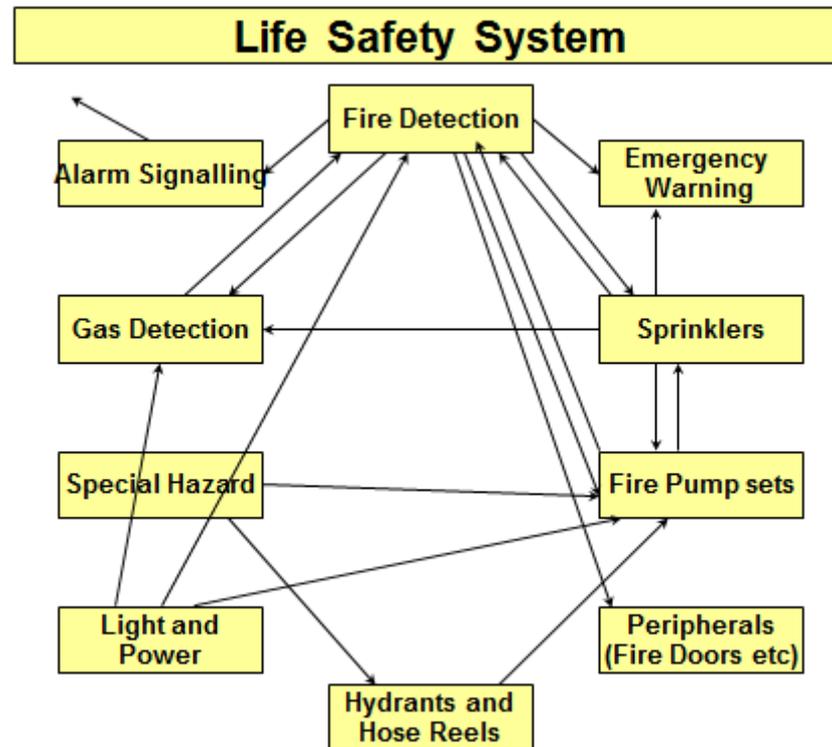
# Industrial Fire Systems

- Periodic inspections and tests based on Australian Standards AS1851 series.
  - ☑ Portable Fire Extinguishers
  - ☑ Fire Hose reels
  - ☑ Sprinkler systems
  - ☑ Fire Hydrants
  - ☑ Smoke and heat venting systems
  - ☑ Smoke control features of air conditioning
  - ☑ Fire resistant door sets
  - ☑ Fire Detection and Alarm systems
  - ☑ Lay flat hose
  - ☑ Emergency Warning systems
  - ☑ Gaseous suppressions systems
  - ☑ Pump set systems
  - ☑ Local Fire Alarm systems

# Problems Associated with the Integration of Life Safety Systems



- Each portion of the 'Life Safety System' tends to be installed individually and not as a complete system.



# Problems associated with Traditional 'Prescriptive Based' Fire Maintenance



- The prescriptive Australian Standards divided Fire Systems into areas of specialisation.
- Building owners and operators must ensure that Fire Protection Systems (Life Safety Systems) are serviced as a whole system, rather than individual items.
- The individual items may operate correctly when tested, but the system as a whole may not.
- The most appropriate way to do this is to have all involved service contractors communicating effectively.

The major problem associated with traditional system component testing, is that the system may not operate correctly in a 'real' fire!





# Other Fire Related Requirements

- Evacuation Procedures
- Evacuation Plans
- Testing the Performance of Evacuations
- Fire Fighting Training
- Housekeeping
- Record keeping
- Annual Maintenance Declarations
- Fire Risk Assessment



# Training and Procedures

- Must be carried out by Recognised Training Organizations to meet Liability under WH&S Act '95
- Training and Evacuation Plans are required under the Building Fire Safety Regulation '91 regarding:-
  - Fire Procedure
  - Means of escape
  - Location and method of operation of fire fighting equipment, fire alarms or equipment for warning of fire.
  - Procedures for conducting members of the public to an exit
  - For persons with other persons in their care or custody within a building, the procedures for conducting the persons to an exit, marshalling the persons in a safe place, checking whether all persons are present at the safe place, reporting procedure for persons not at a safe place.
  - Required within 1 month of person being employed
  - Required annually.

# Housekeeping and Record Keeping



- A record of Fire Instruction must be kept in the building containing the following details:-
  - Date of Training
  - Instructor's Name
  - Description of which workers were instructed, by reference to their occupation or location within the building
  - Description of instruction given
- Must be stored so that it will be preserved in event of a fire.
- Housekeeping - No objects placed in path of travel to a fire exit. (i.e. Any doorway, corridor, stairway, landing or passageway forming part of the path)
- This also means vehicles parked outside exits!

# Annual Maintenance Declarations



- Is provided by Maintenance Company annually.
- Records the results of the Annual Testing and problems still present.
- Is the Building Owner / Occupiers' responsibility to lodge the Declaration annually.
- Must be produced on demand to an authorised fire officer.



# Fire Risk Assessments

- Not required by law, but recommended especially when building works are contemplated, in progress and completed.
- Also recommended when special functions are planned.
- Fire Maintenance providers or Queensland Fire and Rescue Service are willing to assist.



# Legal Requirements

- Fire and Emergency Services Act 1990
- Building Fire Safety Regulation 2008
- QLD Work Health and Safety Act 2011
- National Construction Code 2016
- Retrospectivity

# Changes to 'Prescriptive Based' Fire Codes



- Australian Standards dealing with Fire Equipment maintenance are currently being rewritten to consolidate, simplify and rationalise maintenance requirements.
- Inter-service interfacing requirements will be provided to enable dedicated maintenance programs to be developed for each project where required.
- A 'Life Safety System' approach will be fostered.
- Not all maintenance providers will have the capability to provide this type of maintenance management.

# Changes to 'Prescriptive Based' Fire Codes



- New Standards will recognise that older fire protection systems and equipment will need more maintenance to keep them 'fit for purpose'.
- New Standards will also recognise that concessions should apply to newer more effective systems.
- Older Systems need more adjustment and checking as they generally have parts that wear.
- Newer Systems require less servicing and are more reliable

# Performance Based Fire Maintenance



- Incorporate systems which continuously and automatically test themselves for reliability.
- Incorporate a maintenance management strategy.
- Ensures that ALL stakeholders come together to ensure that the 'Life Safety System' is operational, not just each system component.
- Maintenance 'by design'.
- Provides a greater level of safety, as the integrity of the fire protection systems is always known.



# Future Trends

- Fire protection systems automatically report faults and general status by e-mail or fax directly from the Fire Panel.
- One Service provider co-ordinates all Life Safety System servicing.
- Annual 'full fire alarm' tests to be incorporated into building maintenance budget.
- Maintenance inspection records to be directly entered into Fire System database.
- Monitoring by private providers.



# Reminder!

- Has your Fire Protection System been tested in conjunction with your lifts, air-conditioning shut downs etc.?



# Summary

- Older Prescriptive Testing Standards are being 'phased out' and replaced with a testing regime which will provide a safer environment.
- Effective Evacuation Procedures and Training is as important as the systems which warn of fire situations. It is also a legal requirement.
- Building Owners and Occupiers should be aware of their legal obligations, especially relating to Record Keeping.
- House Keeping, such as ensuring Fire Exits provide free egress, is very important.
- Performance Based Fire Maintenance ensures appropriate levels of testing are carried out for specific systems.
- New Technology will 'proactively' monitor and test the fire systems and then report possible malfunctions remotely.