

**FIRE PROTECTION
COMMISSIONING CHECKLIST**

PURPOSE

This procedural checklist is intended to verify the correct operation and interface of the fire alarm/detection automatic sprinkler, and HVAC systems and confirm the proper coordination among the various trades and is in addition to other specified testing and inspection.

REQUIRED REPRESENTATIVES

PRIME CONTRACTOR _____

SPRINKLER CONTRACTOR _____

FIRE ALARM CONTRACTOR _____

BASE FIRE DEPARTMENT _____

ARMY CORPS OF ENGINEERS _____

BASE FACILITIES ENGINEERING _____

REQUIRED DOCUMENTATION

The prime contractor shall have available for review at this final inspection the following documentation:

1. Automatic sprinkler record shop drawings
2. Fire alarm/detection record shop drawings
3. Contractors material and test certificate for aboveground piping per figure 10-1(a) NFPA 13, 1999
4. Contractors material and test certificate for underground piping per figure 10-1(b) NFPA 13, 1999
5. Inspection & testing form per figure 7-5.2.2 NFPA 72, 1999
6. Completed O&M manuals for both fire sprinkler and fire alarm/detection systems for review and comment prior to approval

REQUIRED EQUIPMENT AND PERSONNEL

The CQC will furnish the following during the test:

1. Two way radios
2. Personnel to silence, confirm and clear alarms at the fire alarm control panel
3. Personnel to confirm and demonstrate accuracy of record shop drawings

PROCEDURE

Beginning in the mechanical room, the required representatives will proceed through the building performing and documenting the following items.

AS-BUILT DRAWINGS

- [] 1. Verify the accuracy of the as-built drawings throughout the facility. Contractor will mark-up any changes on drawings for final as-built drawing submittal.
- [] 2. If fire alarm system is addressable, verify correct addresses are recorded.

FIRE ALARM/DETECTION SYSTEM

- [] 3. Verify that the primary power supply to the Fire Alarm Control Panel is a dedicated, locked circuit per NFPA 72 paragraph 1-5.2.5.2.
- [] 4. Verify any spare fuses and lamps are provided in the Fire Alarm Control Panel per contract specification requirements.
- [] 5. Verify that the transceiver is programmed to transmit to the Base Fire Department all required alarm, supervisory, and trouble signals.
- [] 6. Verify that a smoke or heat detector is located near the Fire Alarm Control Panel per NFPA 72 paragraph 1-5.6.
- [] 7. Verify that a manual pull station and audible/visual notification appliance are provided in the mechanical room.
- [] 8. Verify the trouble response at the Fire Alarm Control Panel for loss of primary power. Under battery power, initiate an alarm and operate for 5 minutes minimum per NFPA 72 Table 7-2.2.
- [] 9. Verify the trouble response at the Fire Alarm Control Panel for loss of secondary power. Initiate an alarm to verify the alarm capability during trouble.
- [] 10. At the Fire Alarm Control Panel, test each IDC, SLC, and NAC for class "A" trouble response and alarm capability for both an open circuit and single ground. Verify the circuits meet the requirements of NFPA 72 Tables 3-5, 3-6, and 3-7.
- [] 11. Test all manual pull stations.
- [] 12. Test all exit stairwell smoke detectors.

- [] 13. For dormitories with single station smoke detectors, test 10% of the single station smoke detectors as directed by the Government, but not less than 5 total. For every failed test, three additional smoke detectors will be tested. For 3 failed tests, all smoke detectors will be tested.
- [] 14. For Family Housing, Child Development Centers, and Dependant Schools, test all smoke detectors.
- [] 15. Test duct smoke detectors for fan shutdown. Verify fan startup upon resetting the Fire Alarm Control Panel.
- [] 16. Check operation of all magnetic door holders.

FIRE SPRINKLER SYSTEM

- [] 17. Test valve tamper switches on fire line entrance and riser.
- [] 18. Verify lids on tamper switches are supervised as required by contract specifications.
- [] 19. Verify proper location and orientation of flow switch on riser.
- [] 20. Test riser flow switch for 90 second alarm response time. Check proper retard setting, inspector's test orifice size, inspector's test discharge, and local alarm gong operation.
- [] 21. Verify proper location and orientation of flow switch on floor control valves.
- [] 22. Test floor control valve tamper switches.
- [] 23. Test floor control valve flow switches. Check for proper inspector's test orifice size and discharge location.
- [] 24. Verify accessibility of the Fire Department Siamese Connection.

LIFE SAFETY ITEMS

- [] 25. Check fire stopping on pipe/duct/conduit penetrations through fire rated mechanical room walls.
- [] 26. Verify all exit doors are not blocked and operable from inside the building.
- [] 27. Verify all exit signs are illuminated and properly located.
- [] 28. Verify proper signage in all exit stairwells as required by NFPA 101 paragraphs 7.2.2.5.4 and 7.2.2.5.5.

- [] 29. Test all emergency lighting for a minimum of 30 seconds per NFPA 101 paragraph 7.9.3.

ELEVATOR SYSTEMS

- [] 30. Verify proper signage in elevator lobbies to direct personnel to exit stairs in case of fire.
- [] 31. Verify dedicated smoke detectors are in each elevator lobby for elevator recall.
- [] 32. Verify dedicated smoke detector is located in machine room for elevator recall. Verify heat detector in elevator machine room for elevator shutdown is located within 2 feet of fire sprinkler head. Verify elevator machine room sprinkler head has a dedicated flow switch to power shunt for elevator shutdown.
- [] 33. For hydraulic type elevators, verify a sidewall fire sprinkler is installed in elevator pit in accordance with NFPA 13 paragraph 5-13.6.1.
- [] 34. Test smoke detectors in elevator lobbies for elevator recall.
- [] 35. Test smoke detector in elevator machine room for elevator recall.
- [] 36. Test heat detector in elevator machine room for elevator shutdown.

FIRE PUMP SYSTEMS

- [] 37. Ensure contractor has copy of factory fire pump test curve at site prior to fire pump testing. Contractor shall use pump acceptance test data form for fire pump testing as shown in NFPA 20 figure A-11.2.6.3(f).
- [] 38. Test fire pump flows at 0, 75, 100, 125, and 150 percent flow capacity as required by contract specifications. Suction pressure, discharge pressure, pump rpm, and voltage and amperage for electric driven pumps shall be measured at each flow point.
- [] 39. For electric driven fire pumps, perform a phase reversal test as required by NFPA 20 paragraph 11.2.6.5.
- [] 40. Test fire pump controllers as required by NFPA 20 paragraph 11-2.7. Six automatic starts and six manual starts shall be performed. Fire pump shall operate five minutes after each start.
- [] 41. For diesel driven pumps, test starts shall be performed from both sets of batteries.

- [] 42. For diesel driven pumps, drivers shall be electrically tested for low oil pressure, high engine jacket coolant temperature, over speed shutdown, battery failure, and battery charger failure as required by contract specifications.

- [] 43. For electric driven fire pumps with alternate power source, controller tests shall be evenly divided by the two power sources as required by contract specifications.