

PLANT SYSTEMS

LOW PRESSURE CO₂ SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.9.3 The low pressure CO₂ systems located in the areas shown in Table 3.7-6 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the low pressure CO₂ protected areas is required to be OPERABLE.

ACTION:

- a. With one or more of the above required low pressure CO₂ systems isolated for personnel protection, to permit entry for routine tours, maintenance, construction or surveillance testing, verify the operability of the fire detection system as per Specification 4.3.3.7 in the affected areas(s) and establish a Roving Fire Watch Patrol (as defined in the Bases Section) in those areas affected by the isolated CO₂ system(s) which are not occupied by workers. In the event that the Roving Fire Watch Patrol cannot be maintained in the affected areas, then personnel must be evacuated and the CO₂ system returned to its normal condition.
- b. With one or more of the above required low pressure CO₂ systems inoperable, within 1 hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant safe shutdown systems or components could be damaged; for other areas ensure that back-up fire suppression equipment is available and establish an hourly fire watch patrol. Restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.3 Each of the above required low pressure CO₂ systems shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the CO₂ storage tank level to be $\geq 50\%$ and pressure to be ≥ 285 psig, and
- b. At least once per 18 months by verifying:
 1. The system valves, associated ventilation dampers and self closing fire doors actuate manually and automatically, upon receipt of a simulated actuation signal, and
 2. Flow from each nozzle during a "Puff Test".

Bases

3/4.7.9 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO₂, Halon and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that one or more of the required low pressure CO₂ systems are isolated for personnel protection, to permit entry for routine tours, maintenance, construction or surveillance testing, the fire detection system(s) required by specification 3.3.3.7 shall be verified to be operable and a Roving Fire Watch Patrol established in the affected areas not occupied by workers. The Roving Fire Watch Patrol(s) shall consist of one or more persons knowledgeable of the location and operation of fire fighting equipment and good fire protection/personnel safety practices such as maintenance of access and egress routes and personnel accountability measures. The functions of the Roving Fire Watch Patrol can be fulfilled by personnel involved in other tasks (e.g. an operator on tour) provided that such personnel fulfilled the above stated requirements. As a minimum, each unoccupied area affected by an isolated low pressure CO₂ system must be visited every twenty-five (25) to thirty-five (35) minutes by the Roving Fire Watch Patrol. Such measures will provide the necessary level of fire protection while affording necessary provisions for personnel safety.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire-fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire-fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire-fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon and CO₂ in the storage tanks by verifying either the weight, level, or pressure of the tanks.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

3/4.7.9 FIRE SUPPRESSION SYSTEMS (Cont'd)

Because of the inaccessibility of the lower containment to personnel during operation due to ALARA radiation exposure concerns, the use of one or more CCTVs in the lower containment, to monitor for fire and smoke, is an acceptable substitute to an hourly fire watch, if the fire suppression system becomes inoperable.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment. The fire barriers, fire barrier penetrations for conduits, cable trays and piping, fire dampers, and fire doors are periodically inspected to verify their OPERABILITY.

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ACTION:

- a. With one or more of the above required low pressure CO₂ systems isolated for personnel protection, to permit entry for routine tours, maintenance, construction or surveillance testing, verify the operability of the fire detection system as per Specification 4.3.3.8. in the affected areas(s) and establish a Roving Fire Watch Patrol (as defined in the Bases Section) in those areas affected by the isolated CO₂ system(s) which are not occupied by workers. In the event that the Roving Fire Watch Patrol cannot be maintained in the affected areas, then personnel must be evacuated and the CO₂ system returned to its normal condition.
- b. With one or more of the above required low pressure CO₂ systems inoperable, within 1 hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant safe shutdown systems or components could be damaged; for other areas ensure that back-up fire suppression equipment is available and establish an hourly fire watch patrol. Restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.
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BASES

3/4.7.8 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

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