



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

CAROLINA POWER AND LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 57  
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Carolina Power and Light Company (the licensee) dated May 17, 1979, as supplemented June 7, 1979, October 15, 1980 and December 3, 1980, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

8105260050

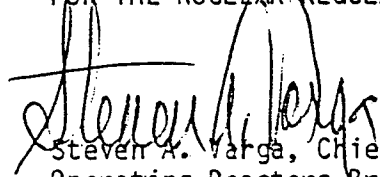
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-23 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 57, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Steven A. Varga, Chief  
Operating Reactors Branch #1  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 15, 1981

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 57 TO FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Revise Appendix A as follows:

| <u>Remove Pages</u> | <u>Insert Pages</u> |
|---------------------|---------------------|
| ii                  | ii                  |
| 3.14-1              | 3.14-1              |
| 3.14-2              | 3.14-2              |
| 3.14-3              | 3.14-3              |
| 3.14-4              | 3.14-4              |
| 3.14-5              | 3.14-5              |
| 3.14-6              | 3.14-6              |
| 3.14-7              | 3.14-7              |
| 3.14-8              | 3.14-8              |
| 4.14-1              | 4.14-1              |
| 4.14-2              | 4.14-2              |
| 4.14-3              | 4.14-3              |
| 4.14-4              | 4.14-4              |

| <u>Section</u> | <u>Title</u>   | <u>Page</u> |
|----------------|--|-------------|
| 3.10.5         | Deleted  |             |
| 3.10.6         | Inoperable Control Rods  | 3.10-8      |
| 3.10.7         | Power Ramp Rate Limits   | 3.10-9      |
| 3.10.8         | Required Shutdown Margins  | 3.10-9      |
| 3.11           | Movable In-Core Instrumentation  | 3.11-1      |
| 3.12           | Seismic Shutdown   | 3.12-1      |
| 3.13           | Shock Suppressors (Snubbers)   | 3.13-1      |
| 3.14           | Fire Protection System   | 3.14-1      |
| 3.14.1         | Fire Detection and Actuation Instrumentation                                 | 3.14-1      |
| 3.14.2         | Fire Suppression Water System  | 3.14-2      |
| 3.14.3         | Fire Water Pre-Action Systems  | 3.14-2      |
| 3.14.4         | Fire Hose Stations   | 3.14-3      |
| 3.14.5         | CO <sub>2</sub> Fire Protection System                                       | 3.14-3      |
| 3.14.6         | HaIon Fire Protection System   | 3.14-4      |
| 3.14.7         | Fire Barrier Penetration Fire Seals  | 3.14-5      |
| 3.15           | Control Room Filter System   | 3.15-1      |
| 4.0            | Surveillance Requirements  | 4.1-1       |
| 4.1            | Operational Safety Review  | 4.1-1       |
| 4.2            | Primary System Surveillance  | 4.2-1       |
| 4.3            | Primary System Testing Following Opening                                     | 4.3-1       |
| 4.4            | Containment Tests  | 4.4-1       |
| 4.4.1          | Operational Leakage Rate Tests   | 4.4-1       |
| 4.4.2          | Isolation Valve Tests  | 4.4-4       |
| 4.4.3          | Post Accident Recirculation Heat Removal System                              | 4.4-4       |
| 4.4.4          | Operational Surveillance Program   | 4.4-5       |
| 4.5            | Emergency Core Cooling, Containment Cooling and Iodine Removal Systems Tests | 4.5-1       |
| 4.5.1          | System Tests   | 4.5-1       |
| 4.5.2          | Component Tests  | 4.5-2       |
| 4.6            | Emergency Power System Periodic Tests  | 4.6-1       |
| 4.6.1          | Diesel Generators  | 4.6-1       |
| 4.6.2          | Diesel Fuel Tanks  | 4.6-2       |
| 4.6.3          | Station Batteries  | 4.6-2       |
| 4.7            | Secondary Steam and Power Conversion System                                  | 4.7-1       |
| 4.8            | Auxiliary Feedwater System   | 4.8-1       |
| 4.9            | Reactivity Anomalies   | 4.9-1       |
| 4.10           | Radioactive Effluents  | 4.10-1      |
| 4.11           | Reactor Core   | 4.11-1      |
| 4.12           | Refueling Filter Systems   | 4.12-1      |
| 4.13           | Shock Suppressors (Snubbers)   | 4.13-1      |
| 4.14           | Fire Protection System   | 4.14-1      |
| 4.15           | Control Room Filter System   | 4.15-1      |
| 4.16           | Radioactive Source Leakage Testing   | 4.16-1      |
| 5.0            | Design Features  | 5.1-1       |
| 5.1            | Site   | 5.1-1       |
| 5.2            | Containment  | 5.2-1       |
| 5.2.1          | Reactor Containment  | 5.2-1       |
| 5.2.2          | Penetrations   | 5.2-1       |
| 5.2.3          | Containment Systems  | 5.2-2       |
| 5.3            | Reactor  | 5.3-1       |
| 5.3.1          | Reactor Core   | 5.3-1       |
| 5.3.2          | Reactor Coolant System   | 5.3-2       |
| 5.4            | Fuel Storage   | 5.4-1       |
| 5.5            | Seismic Design   | 5.5-1       |

Applicability:

Applies to the operating status of the fire detection instrumentation, fire suppression systems, fire barriers, and to the administrative controls required for a comprehensive fire protection and prevention program. The requirements of these specifications shall apply to an area or areas when equipment in that area or areas is required to be operable as specified by other Limiting Conditions for Operation.

Objectives:

To assure the operability of Fire Protection Systems.

Reports:

Except as specified by the Limiting Conditions for Operation, the reporting requirements of 6.9.2 shall not apply for Fire Protection Systems.

Specification:3.14.1 Fire Detection and Actuation Instrumentation

- 3.14.1.1 As a minimum, the fire detection and actuation instrumentation for each fire detection zone shown in Table 3.14.1 shall be OPERABLE.
- 3.14.1.2 With the number of operable fire detection and actuation instruments less than required by Table 3.14.1:
- a. For Fire Zones 24, 25A, 25B, 25C and 26 (inside Reactor Containment) initiate an inspection once per shift of the affected zone with particular emphasis on identifying any potential hazards for fire.
  - b. For all other fire zones, within one (1) hour increase the inspection frequency of the zone with the inoperable instrument(s) to at least once per hour.
  - c. Restore the inoperable instrument(s) to operable status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to operable status.

3.14.1 Continued

Basis:

Operability of the fire detection and actuation instrumentation ensures that adequate warning capability is available for prompt detection of fires and provides for the actuation of automatic isolation and suppression systems which protect various safety related areas of the plant. The capabilities are required in order to detect, locate, isolate and extinguish fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection and actuation instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is returned to service.

3.14.2 Fire Suppression Water System

3.14.2.1 The Fire Suppression Water System shall be OPERABLE with:

- a. Two high pressure pumps, each with a capacity of 2500 gpm, with their discharge aligned to the yard loop, and
- b. An operable flow path capable of taking suction from the Unit 2 intake structure and transferring the water through distribution piping with operable sectionalizing, or isolation valves.

3.14.2.2 With less than the above required equipment OPERABLE:

Restore the inoperable equipment to operable status within seven days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system.

3.14.2.3 With no Fire Suppression Water System OPERABLE:

- a. Establish a backup fire suppression water system within 24 hours, and provide prompt notification with written followup in accordance with Specification 6.9.2.a. The written followup report shall contain information outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status, or
- b. Proceed to hot shutdown within twelve hours and be in cold shutdown within the next 24 hours.

3.14.3 Fire Water Pre-Action System

3.14.3.1 The Fire Water Pre-Action Systems in the first floor Auxiliary Building hallway above the instrument and service air compressor and the Containment Vessel Electrical Penetration Area shall be OPERABLE:

3.14.3.1 Continued

- a. With no visible water leakage from the spray nozzles.
- b. With the air supply to the system operable,
- c. With automatic initiation logic operable, and
- d. With the system aligned to deliver to the protection area.

3.14.3.2 With the Fire Water Pre-Action Systems in a condition of readiness less than required by the above:

- a. For the Containment Vessel Electrical Penetration Area initiate an inspection once per shift with particular emphasis on identifying any potential hazards for fire.
- b. For all other areas, within one (1) hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- c. Restore the system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g 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.

3.14.4 Fire Hose Stations

3.14.4.1 Each fire hose station in Table 3.14.2 shall be OPERABLE.

3.14.4.2 With a hose station in Table 3.14.2 inoperable:

- a. Route an additional equivalent capacity hose to the unprotected area from an operable hose station within one hour if the inoperable fire hose is the primary means of fire suppression; otherwise, route the additional hose within 24 hours.
- b. Restore the hose station to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g 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.

3.14.5 CO<sub>2</sub> Fire Protection System

3.14.5.1 The CO<sub>2</sub> Fire Protection Systems for 1) the Diesel Generator Rooms and, 2) North and South Cable Vaults shall be OPERABLE, each:

- a. With a complete bank (19 cylinders for the Diesel Generator Room and 18 cylinders in the North and South Cable Vaults) of fully charged CO<sub>2</sub> cylinders in service,
- b. With the system aligned to deliver to the protected areas, and
- c. With automatic initiation logic operable. For the Diesel Generators, this includes two dedicated heat detectors per room for CO<sub>2</sub> actuation.
- d. A CO<sub>2</sub> cylinder shall be deemed fully charged if it contains not less than 90% of the full charge weight.

3.14.5.2 With any of the CO<sub>2</sub> Fire Protection System in a condition of readiness less than required by the above:

- a. Within one (1) hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. Restore the affected system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g 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. If a diesel generator CO<sub>2</sub> Fire Protection System is inoperable and the affected diesel generator is running, immediately post a continuous fire watch. A continuous fire watch shall be maintained until the CO<sub>2</sub> fire protection system is restored to operability or until the diesel generator has been shut down.

3.14.6 Halon Fire Protection System

3.14.6.1 The Halon Fire Protection System for the Cable Spread Room Emergency Switchgear Room and the Safeguards Room shall be OPERABLE:

- a. With a complete bank (10 cylinders, 5 instantaneous and 5 extended discharge) of fully charged Halon cylinders in service.
- b. With the systems aligned to deliver to the protected areas.
- c. With automatic initiation logic operable.
- d. A Halon Cylinder shall be deemed to be fully charged if it contains not less than 90% of its full charge pressure and not less than 95% of its full charge weight.

3.14.6.2 With the Halon Fire Protection System in a condition of readiness less than required by the above:

- a. Within one (1) hour establish a continuous fire watch with fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. Restore the system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3.g 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.

Basis:

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, CO<sub>2</sub>, 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.



3.14.6.2 Continued

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 affected equipment can be restored to service.

In the event that 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 requirements 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.

3.14.7 Fire Barrier Penetration Fire Seals

3.14.7.1 All penetration fire barriers protecting safety related areas shall be OPERABLE when equipment in those areas are required to be OPERABLE.

3.14.7.2 With the penetration fire barrier inoperable.

- a. The OPERABILITY of the fire detection systems providing coverage for the fire areas on either side of the penetration, as applicable, shall be verified within one hour.
- b. If either of the detection systems are inoperable, a continuous fire watch shall be established on at least one side of the affected penetration within one hour.
- c. Restore the inoperable fire barrier penetration(s) to OPERABLE status within 7 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.3g within the next 30 days outlining the action taken, the cause of the inoperable penetration and plans and schedule for restoring the fire barrier penetration(s) to OPERABLE status.

Basis:

The OPERABILITY of the fire barrier penetration seals ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barrier penetration seals are a passive element in the facility fire protection program and are subject to periodic inspections.

During periods of time when the seals are not OPERABLE verification of fire detection system OPERABILITY is required to insure that prompt detection capability exists in the vicinity of the penetration barrier. Should an area detection system be inoperable, the fire watch will provide the required protection until the seal is restored to OPERABLE status.

TABLE 3.14.1  
FIRE DETECTION AND ACTUATION INSTRUMENTATION

| <u>FIRE ZONE NO.</u> | <u>ROOM</u>                           | <u>TRAINS A &amp; B**</u> | <u>TRAIN A*</u> | <u>TRAIN B*</u> |
|----------------------|---------------------------------------|---------------------------|-----------------|-----------------|
| 1                    | Diesel Gen. B                         | 3                         | 1               | 1               |
| 2                    | Diesel Gen. A                         | 3                         | 1               | 1               |
| 3                    | SIS Pump                              | 2                         |                 |                 |
| 4                    | Charging Pump                         | 2                         |                 |                 |
| 5                    | Component Cooling                     | 4                         |                 |                 |
| 7                    | Aux. FW Pump                          | 1                         |                 |                 |
| 8                    | Boron Injection                       | 1                         |                 |                 |
| 9                    | Cable Vault N                         | 1                         | 1               | 1               |
| 10                   | Cable Vault S                         | 6                         | 1               | 1               |
| 11                   | Aux. Bldg. Corridor (N) 1st Floor     | 4                         |                 |                 |
| 12                   | Aux. Bldg. Corridor (Cent.) 1st Floor | 4                         | 1               | 1               |
| 13                   | Aux. Bldg. Corridor (S) 1st Floor     | 5                         |                 |                 |

| <u>FIRE ZONE NO.</u> | <u>ROOM</u>                         | <u>TRAINS A &amp; B**</u> | <u>TRAIN A*</u> | <u>TRAIN B*</u> |
|----------------------|-------------------------------------|---------------------------|-----------------|-----------------|
| 15                   | Aux. Bldg.<br>Corridor<br>2nd Floor | 5                         |                 |                 |
| 16                   | Battery<br>Room                     | 2                         |                 |                 |
| 17                   | HVAC<br>Equipment                   | 2                         |                 |                 |
| 19                   | Cable Spread<br>Room #2             | 6                         | 1               | 1               |
| 20                   | Emergency<br>Switchgear<br>Room     | 6                         |                 |                 |
| 21                   | Rod Control<br>Room                 | 2                         |                 |                 |
| 22                   | Control<br>Room                     | 6                         |                 |                 |
| 23                   | Hagan Relay<br>Room                 | 2                         |                 |                 |
| 24                   | Containment Elect.<br>Penetrations  | 4                         | 1               | 1               |
| 25A                  | RCP A                               | 1                         | 1               | 1               |
| 25B                  | RCP B                               | 1                         | 1               | 1               |
| 25C                  | RCP C                               | 1                         | 1               | 1               |
| 26                   | HVH-1<br>HVH-2<br>HVH-3<br>HVH-4    | 1<br>1<br>1<br>1          |                 |                 |
| 27                   | RHR Pit                             | 2                         |                 |                 |
| 28                   | Pipe Space                          | 6                         |                 |                 |

\* Minimum number of detectors per train needed for suppression actuation.

\*\* Minimum number of detectors needed for area coverage as per NFPA 72-3, 1978.

TABLE 3.14.2

## HOSE STATIONS

| <u>Location</u>                                       | <u>Elevation</u> |
|---|------------------|
| 1. Entrance to Cable Spread Room                      | 242              |
| 2. Emergency Bus Room                                 | 246              |
| 3. Waste Disposal Panel Area                          | 226              |
| 4. MCC 10 Area  | 226              |
| 5. Primary Water Pump Area                            | 226              |
| 6. Boric Acid Batch Tank Room                         | 246              |
| 7. Containment Entrance Area                          | 226              |
| 8. Hose House Including Hydrant Near Intake Structure | 226              |
| 9. RHR Pump Area                                      | 244              |
| 10. Hagan Room  | 254              |
| 11. Pipe Alley  | 226              |
| 12. Outside "C" Reactor Coolant Pump Bay - 1st Level  | 233              |
| 13. Outside "C" Reactor Coolant Pump Bay - 2nd Level  | 256              |
| 14. East of Personnel Hatch Inside C.V. - 1st Level   | 233              |
| 15. East of Personnel Hatch Inside C.V. - 2nd Level   | 256              |
| 16. West of C.V. Elevator - 1st Level                 | 233              |
| 17. West of C.V. Elevator - 2nd Level                 | 256              |
| 18. At C.V. North Stairwell - 1st Level               | 233              |
| 19. At C.V. North Stairwell - 2nd Level               | 256              |

Applicability:

Applies to periodic testing and surveillance program for Fire Protection System.

Objective:

To verify the ability of the Fire Protection System components to function as required and to prevent system degradation.

Specification:4.14.1 Fire Detection Instrumentation

- 4.14.1.1 Each of the fire detectors in the fire detection zones in Table 3.14.1 shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST:
- a. During each cold shutdown exceeding 24 hours unless performed in the previous 6 months for Fire Zones 24, 25A, 25B, 25C and 26.
  - b. Semi-annually for all other zones.
- 4.14.1.2 The non-supervised circuits, associated with detector alarms, between the instrument and the main alarm panel shall be demonstrated OPERABLE at least once per 31 days.

4.14.2 Fire Suppression Water System

The Fire Suppression Water System shall be demonstrated OPERABLE:

- a. Monthly on a STAGGERED TEST BASIS by starting each pump from ambient conditions and operating it for  $>N$  minutes. Note:  $N = 15$  for the electric motor driven fire pump, and  $N = 60$  for the diesel engine driven fire pump.
- b. Monthly by verifying that each valve (manual, power operated or automatic) in the flow path is in its correct position.
- c. Annually by cycling each valve in the flow path through at least one complete cycle of full travel.
- d. Every 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
  1. Verifying that each pump develops at least 2500 gpm at a system pressure of 125 psig.

2. Verifying that each high pressure pump starts sequentially from ambient conditions to restore the fire suppression water supply pressure to  $>125$  psig and runs for  $>N$  minutes while loaded with the fire pump. Note:  $N = 15$  for the electric motor driven fire pump, and  $N = 60$  for the diesel engine driven fire pump.
- e. Every 3 years by performing flow tests of the system in accordance with Section 11, Chapter 5 of Fire Protection Handbook, 14th Edition published by National Fire Protection Association.

## 4.14.3

CO<sub>2</sub> Systems

The CO<sub>2</sub> systems shall be demonstrated OPERABLE:

- a. Semi-annually by verifying the weight of each high pressure cylinder.
- b. Every 18 months, by verifying the system valves and associated ventilation controls actuate automatically and manually, as appropriate, to a simulated actuation signal. A brief flow test or equivalent shall be made to verify flow from each nozzle.

## 4.14.4

Fire Hose Stations

Each fire hose station listed in Section 3.14 shall be verified OPERABLE:

- a. Monthly by visual inspection of the station to assure all essential equipment is available.
- b. Every 18 months by removing the hose for inspection and re-racking and replacing all gaskets that are degraded in the couplings.
- c. Every three years, partially open each hose station valve to verify operability and no blockage.
- d. Every three years hydrotest the hose at each hose station per NFPA 198 except that the test pressure shall be at least 50 psi greater than the maximum zero flow pressure at that station.

## 4.14.5

Fire Barrier Penetration Seals

## 4.14.5.1

Penetration fire barriers shall be verified to be OPERABLE by a visual inspection:

- a. Once per refueling cycle for fire doors and fire dampers.
- b. Electrical penetration fire barrier seals shall be inspected on the following basis:
  1. 10% of all seals shall be inspected per refueling cycle with 100% of all seals being inspected over a period of ten refueling cycles. For each seal found to be degraded an additional 10% of all seals shall be inspected.
- c. Prior to declaring a fire penetration seal OPERABLE following repairs or maintenance.

4.14.6 Fire Suppression Water System

4.14.6.1 The fire pump diesel engine shall be demonstrated OPERABLE:

- a. Monthly by verifying:
  1. The fuel storage tank contains at least 250 gallons of fuel, and
  2. See Specification 4.14.2.a.
- b. Every 18 months by:
  1. Subjecting the diesel engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of services, and
  2. See Specification 4.14.2.d.2.

4.14.6.2 The fire pump diesel engine starting battery bank and charger shall be demonstrated OPERABLE:

- a. Weekly by verifying that:
  1. The electrolyte level of each battery is above the plates, and
  2. The overall battery voltage is  $\geq 24$  volts.
- b. Quarterly by verifying that the specific gravity is appropriate for continued service of the battery.
- c. Every 18 months by verifying that:
  1. The batteries show no visual indication of physical damage or abnormal deterioration, and
  2. The battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

4.14.7 Halon System

The Halon System shall be demonstrated OPERABLE:

- a. Semi-annually by verifying the weight and pressure of each high pressure cylinder.
- b. Every 18 months by verifying the system valves and associated ventilation controls actuate automatically and manually as appropriate, to a simulated actuation signal. A brief flow test or equivalent shall be made to verify flow from each nozzle.

4.14.8 Fire Water Pre-Action System

The Fire Water Pre-Action Systems protecting the Auxiliary Building hallway containing the Instrument and Service Air Compressors and the Containment Electrical Penetration Area shall be demonstrated OPERABLE:

- a. Annually by cycling each testable valve in the flow path through at least one complete cycle of travel.
- b. Every 18 months perform a system functional test which includes simulated automatic actuation of the system and which verifies that the automatic valves in the flow path actuate to their correct positions.
- c. Every 18 months by a visual inspection of each nozzle's spray area to verify the spray pattern is not obstructed.