U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-266/87007(DRS); 50-301/87007(DRS)

Docket Nos. 50-266; 50-301 Licenses No. DPR-24; DPR-27

Licensee: Wisconsin Electric Power Company
231 West Michigan, Room 308
Milwaukee, WI 53203

Facility Name: Point Beach Nuclear Plant, Units 1 and 2

Inspection At: Two Creeks, Wisconsin

Inspection Conducted: February 23 through June 26, 1987

Jeff Holmes

Inspectors: Jeff Holmes 6-30-87
Date

R.N. Gardner for
K. Parkinson (BNL) 7/2/87
Date

R.N. Gardner for
R. Hoder (BNL) 7/2/87
Date

Ronald N. Gardner
Approved By: Ronald N. Gardner 7/2/87
Plant System Section
Date

Inspection Summary

Inspection on February 23 through June 26, 1987 (Reports No. 50-266/87007(DRS); 50-301/87007(DRS))
Areas Inspected: Routine, announced safety inspection conducted to assess compliance with 10 CFR 50, Appendix R, and review Fire Protection Program requirements. The following inspection modules were employed by the inspectors: 2515-62; 64703 and 64704.
Results: Of the two areas inspected, no violations or deviations were identified.

## DETAILS

1. Persons Contacted

   Wisconsin Electric Power Company

   *J. Zach, Plant Manager
   +D. Bell, Project Engineer
   +M. Crouch, Assistant Maintenance and Construction Superintendent
   +A. Cuswell, Electrical Maintenance Supervisor
   +*F. Flentje, Administrative Specialist
   +*G. Frieling, Systems Engineer
   +P. Glessner, System Fire Protection Engineer
   +D. Ivey, System Security Officer
   +M. Kaminski, System Fire Protection Engineer
   +P. Katers, Senior Project Engineer
   *J. Knorr, Regulatory Engineer
   +T. Koehler, General Superintendent
   +D. Lawler, Manager, Human Resources
   +G. Maxfield, Operations Superintendent
   +*R. Newton, Superintendent

   USNRC

   +T. Colburn, Project Manager, NRR
   *R. L. Hague, Senior Resident Inspector
   +R. J. Leemon, Resident Inspector

   +Denotes those present during February 27, 1987, exit meeting.
   *Denotes those present during May 7, 1987, exit meeting.

2. Assessment of Appendix R Compliance

   On a sample basis, the inspectors examined measures that the licensee took to assure safe shutdown capability and compliance with 10 CFR 50.48, Appendix R. The inspection consisted of an assessment of the licensee's implementation of Appendix R requirements for physical plant conditions, required operator actions, systems and components, operator training, supplemental procedures, and methodology employed to mitigate resultant adverse equipment operability due to plant exposure to fires. The results of the inspectors' review are as follows:

   a. Systems Required for Safe Shutdown

      The Appendix R goals required to achieve post-fire safe shutdown are:

      ° Reactivity control capable of achieving and maintaining cold shutdown reactivity conditions (reactor coolant temperature less than or equal to 200°F).

- Reactor coolant makeup capable of maintaining water level within the level indication in the pressurizer at all times during shutdown operation.

- The reactor heat removal function shall be capable of achieving and maintaining decay heat removal.

- Process monitoring capable of providing direct readings to perform and control the above functions.

- Supporting functions capable of providing process cooling, lubrication, etc., necessary to permit operation of the equipment used for safe shutdown functions.

In accomplishing these goals, equipment and systems used to achieve and maintain hot shutdown conditions should be free of fire damage and capable of maintaining such conditions for 72 hours with or without offsite power. The systems and equipment used to achieve and maintain cold shutdown conditions should either be free of fire damage, or the damage limited such that repairs can be made within 72 hours using onsite procedures and materials.

During the post-fire shutdown, the reactor coolant system process variables shall be maintained within those predicted for a loss of normal AC power, and the fission product integrity shall not be affected, i.e., there shall be no fuel clad damage, rupture of any primary coolant boundary, or rupture of the containment boundary.

(1) <u>Reactivity Control Function</u>

Initial reactivity control results from an automatic Reactor Protection System (RPS) trip or from operator initiation of a manual trip. The required margin of shutdown reactivity is maintained by the addition of borated water from the Refueling Water Storage Tank (RWST). The total quantity of borated water from the RWST (2000 ppm-min. Tech Spec concentrations) is more than the amount required to maintain pressurizer level within the operating band during cooldown (compensation for RCS volume shrinkage). The Chemical and Volume Control System (CVCS) is used to inject the borated water during safe shutdown.

(2) <u>Reactor Coolant Makeup</u>

Reactor coolant makeup is achieved by operation of the charging portion of the CVCS through the RCP seal injection path and the auxiliary charging path. Normal and excess letdown paths are isolated. Control of pressurizer water level is achieved manually by controlling CVCS charging flow using local or remote pressurizer level indication.

Maintenance of RCS integrity is necessary to achieve adequate inventory and pressure control. Spurious operation of primary boundary isolation valves such as pressurizer and reactor vessel vent valves, pressurizer power operated relief valves (PORV's), and RHR isolation is precluded by post-fire operator action or deenergization of valve circuits during plant power operation.

(3) Reactor Coolant Pressure Control

Overpressure protection of the RCS prior to a controlled cooldown and depressurization is provided by the pressurizer safety valves. After alignment of the Residual Heat Removal System (RHR), at approximately 350°F and 425 psig, overpressure protection is provided by the RHR safety valves. To maintain pressure control, isolation of the pressurizer auxiliary spray and normal letdown is accomplished by operator action. During natural circulation cooldown adequate sub-cooling margin is maintained by using the pressurizer heaters. As an alternative, charging pump flow can be used to raise system pressure during cooldown.

(4) Reactor Heat Removal Functions

The Auxiliary Feedwater System (AFW) supplies secondary makeup flow to the steam generators for maintenance of initial hot shutdown conditions. A minimum of one steam generator is required and a secondary flow rate of 200 gpm is adequate for decay heat removal via natural circulation. The condensate storage tanks are the preferred feedwater source with the Service Water System as a backup. Either motor-driven or turbine-driven auxiliary feed pumps are used to supply feedwater. Transition from stable hot shutdown conditions to cooldown is achieved by manual control of steam generator pressure. Removal of decay and latent heat is achieved by controlled operation of the steam generator atmospheric dump valve and continued operation of the AFW pumps.

After reduction of reactor coolant system temperature below 350°F, the RHR system is used to establish long-term core cooling.

(5) Process Monitoring Instrumentation

The following minimum safe shutdown instrumentation is available for post-fire shutdown process monitoring.

- Pressurizer pressure and level
- Reactor coolant hot and cold leg temperature
- Source range flux monitor
- Steam generator pressure and wide range level
- Tank level for RWST, CST

(6) Supporting Functions

The following support equipment is required for post-fire safe shutdown:

- ° Emergency Diesel Generators
- ° 4610V AC
- ° 480 V AC
- ° 125 V DC
- ° 120 V AC
- ° Component Cooling Water
- ° Service Water System

b. Alternative Safe Shutdown

The licensee provides alternate shutdown capability for three fire areas at Point Beach that do not meet the protection criteria of Appendix R, Section III.G.2. These are the Control Room, the Cable Spreading Room and the Containment Spray Additive Tank Area.

A remote shutdown panel is provided by the licensee for safe shutdown in the event of fire in the three fire areas listed above. The team inspected the panel for compliance with the design documentation and found no violations.

c. Alternative Safe Shutdown Procedures

Areas of the plant which do not meet Appendix R, Section III.G.2 and for which alternative safe shutdown is provided are identified in Section 2.b. A review was conducted by the team of procedures required for alternative safe shutdown. Additionally, operation training was reviewed.

The licensee provided two procedures for implementation of alternative safe shutdown:

- ° AOP-10A Revision 6, dated February 18, 1987, entitled "Control Room Inaccessibility."
- ° AOP-10B Revision 0, dated February 6, 1987, entitled "Safe to Cold Shutdown in Local Control."

Three operators, independent of the fire brigade, are required to achieve stable hot shutdown conditions using these procedures. The procedure identifies these operators as the Duty Shift Superintendent, and Control Operators 1 and 2. The procedure review indicated that there was a sufficient level of detail and that the procedures contained the necessary steps to achieve cold shutdown in a safe and orderly manner. In the course of implementing the procedure, the operators are required to perform many manual operations at locations remote from the shutdown panel. The manual operations include breaker lineup, valve lineup and valve closure. These operations are required to strip loads and lineup systems. Location of breakers and valves was facilitated by the use of red paint on the handwheels of the valves and a red "R" affixed to the breakers involved. In reviewing the actions assigned to Control Operator No. 2, the team observed that Step 6.9, "aligning the service water system," could be given a higher priority in order to provide timely service water flow to the emergency diesel generator. The licensee concurred with this comment and agreed to consider a procedure modification. In addition to the procedural review, timeline charts developed by the licensee were reviewed and checked against the procedural steps. No unacceptable items were found. The timeline charts also verified that auxiliary feedwater supply to the steam generator would be established before steam generator dryout occurred (approximately 35 minutes).

Control Room Inaccessibility Procedure AOP-10A was walked down as part of the inspection with one member of the inspection team assigned to each operator. The operators, in performing the walkdown, exhibited a good familiarity with the procedural steps and equipment location and responded well to unrehearsed postulated occurrences submitted by the team.

During the inspection, licensee representatives stated that a permanent safe shutdown communication system had not been established. The licensee is conducting a Control Room design review which includes a study of the facility communication requirements, including safe shutdown communications. Upon completion of the Control Room design review, the facility communications system will be modified to support the design review requirements.

During the walkdown of the safe shutdown procedure, the interim communication procedures were found to adequately support the safe shutdown procedure.

The lack of permanent safe shutdown communication system is considered an open item (266/87007-01; 301/87007-01), pending review and acceptance of licensee actions regarding the Control Room design review.

In addition to the procedural review and walkdown, the team reviewed operation training at Point Beach with the licensee's training coordinator. Lesson plans and training records were examined and found to be satisfactory.

d. Protection For Associated Circuits

The following associated circuit concerns were evaluated:

- Common Bus Associated Circuits: The common bus concern is found in circuits, either non safety-related or safety-related, where there is a common power source with shutdown equipment and the power source is not electrically protected from the circuit of concern.

- Spurious Signal Associated Circuits: The spurious signal concern consists of two parts:

  - False motor, control and instrument readings such as occurred at the 1975 Brown's Ferry Fire. The indications could be caused by fire initiated ground, shorts, or open circuits.

  - Spurious operation of safety-related components that would adversely affect shutdown capability (e.g., RHR isolation valves).

- Common Enclosure Associated Circuits: The common enclosure concern is found when redundant circuits are routed together in a raceway or enclosure and they are not electrically protected or fire can destroy both circuits due to inadequate fire protection means.

The inspection results were as follows:

(1) Common Bus Concern

(a) Circuit Coordination

Breaker coordination is audited by reviewing the time current curves developed during the licensee's bus coordination study. At the Point Beach Nuclear Plant, the following circuits were randomly selected for review:

| Circuit | Comment |
|---|---|
| 1-B03 | Coordination Satisfactory |
| 1-B31 | Coordination Satisfactory |
| 1-D01 | Coordination Satisfactory |
| 1-D11 | Coordination Satisfactory |
| 1-D16 | Coordination Satisfactory |
| 1-D03 | Coordination Satisfactory |
| 1-D31 | Coordination Satisfactory |
| 1Y01 | Coordination Satisfactory |
| 1Y101 | Coordination Satisfactory |
| 1Y103 | Coordination Satisfactory |
| 1A05 | Coordination Satisfactory |

The licensee's circuit coordination program was found to be comprehensive and satisfactorily documented by coordination (time-overcurrent) curves.

To ensure that the existing satisfactory circuit coordination is not compromised by future design changes, the licensee has an established procedure, Design Control Form QP3-2.2, that specifies circuit analysis for Appendix R concerns.

The licensee performs breaker and relay testing every refueling outage, which provides a maximum maintenance and testing frequency of 18 months. Breaker and relay maintenance and testing are currently scheduled by a manual callup system; however, conversion to an automated scheduling program is in progress. Maintenance records for the following randomly selected relays were reviewed to verify that electrical maintenance/testing is being performed at the specified frequency: Device No. 811/A01, 272/A01, and 274/A01. This review indicated that maintenance was performed during the last two refueling outages.

The licensee's circuit coordination was found to be satisfactory.

(b) High Impedance Fault Analysis

The high impedance fault concern is found in the case where multiple high impedance faults exist as loads on a safe shutdown power supply and cause the loss of the safe shutdown power supply prior to clearing the high impedance faults.

The licensee provides protection for high impedance faults through the use of safe shutdown procedures. Procedures, AOP-10A, "Control Room Inaccessibility," and AOP-10B, "Safe to Cold Shutdown in Local Control," include steps to strip, reenergize, and sequentially load a bus or MCC loss due to high impedance faults.

The licensee's protection for high impedance was found to be satisfactory.

(2) Spurious Signals

(a) High/Low Pressure Interface

The licensee has identified the following high/low pressure interface including methods for controlling the interface:

| Interface | Method of Control/Status |
|---|---|
| Letdown<br>CVCS-V200A<br>CVCS 1/2-V200B<br>CVCS-V200C | Procedure AOP-10A<br>Step 5.12 fails the valves closed |
| Excess Letdown<br>CVCS 1/2-MOV1299 | Valve control circuit modification<br>Mod 83-154 for Unit 1<br>Mod 83-155 for Unit 2 |

| Interface | Method of Control/Status |
|---|---|
| Shutdown Cooling<br>RHR 1/2-MOV-700<br>RHR 1/2-MOV-701 | Procedure OP-7B<br>Step 4.16 specifies shutting the valves and locking the breakers open |
| PZR Loop Drains<br>1/2-PCV-430<br>1/2-PCV-431C | Procedure AOP-10A<br>Step 5.12 fails the valves open |
| RCS Loop Drains<br>1/2-MOV-598<br>1/2-MOV-599 | Procedure CL-4A<br>Step 4.10 specifies locking breakers open |
| RX Vessel and PZR Vents<br>1/2-RC-570A<br>1/2-RC-570B<br>1/2-RC-580A<br>1/2-RC-580B<br>1/2-RC-575A<br>1/2-RC-575B | Procedure CL-4A<br>Step 4.12 specifies failing valves closed |

The licensee's analysis and control of high/low pressure interfaces were found to be satisfactory.

(b) Current Transformer Secondaries

The licensee's current transformer (CT) analysis, "Current Transformers As A Fire Hazard-Point Beach Nuclear Plant," NENE-87-44, dated February 20, 1987, determined the following:

- CTs installed in the diesel generator control cabinets and the 4160 volt switchgear could potentially present CT open secondary concerns.
- The maximum CT secondary potential would be 400 volts. The maximum secondary potential was determined using generic CT characteristic curves instead of plant specific characteristic curves.
- The CT secondary cables are rated for 600 volt service.
- The CTs installed in the diesel generator control cabinets are shorted to ground when the diesel generator is transferred to local operation.

Grounding the CT secondaries provides protection for the diesel generator CTs during local operation of the diesel generator.

The CT analysis is based on generic plant specific data and not plant specific CT characteristic curves. This is considered an open item (266/87007-02; 301/87007-02) pending Region III review of plant specific CT characteristic curves.

(c) Isolation of Fire Instigated Spurious Signals

The licensee has provided isolation for fire instigated spurious signals by various methods, including:

- Administrative controls
- Rerouting of cables
- Wrapping Cables
- Isolation switches
- Dedicated power supplies

During the inspection, all forms of isolation listed above were observed. The following components were reviewed to verify proper spurious signal isolation:

- Diesel generator
- Alternate shutdown instrumentation

1 Diesel Generator Isolation

Diesel generator isolation is accomplished by positioning transfer switches to the local position. The transfer switches are located in the diesel generator rooms. When placed in the local position, the diesel generator controls are isolated from the areas requiring alternate shutdown capability. Alternate control power is provided by separate circuit breakers.

Diesel generator isolation was found to be satisfactory.

2 Alternative Shutdown Instrumentation

The alternate shutdown instrumentation is isolated from the areas requiring alternate shutdown by isolation switches and dedicated power supplies. The isolation switches are installed on the local shutdown panels. When placed in the local position, the switches isolate the cabling to the Control Room and switch in the dedicated instrument power supplies. The dedicated power supplies are installed in the auxiliary feedwater pump room and are isolated from the alternate shutdown areas.

Alternate shutdown instrumentation isolation was found to be satisfactory.

The licensee's methods of fire instigated spurious signal isolation were found to be satisfactory.

(3) Common Enclosure

The licensee representatives stated that:

- Cables for redundant safe shutdown divisions that were routed in a common enclosure were rerouted.
- Non safety-related cables routed in common enclosure with safety-related cables were protected by coordinated breakers and fuses.

Manholes 1 and 2 were inspected to determine if cables were routed between the redundant manholes. Cable 1B10BA, Fire Pump P-35A power cable, was found to be routed between the two manholes in common enclosure with redundant service water pump cables. Review of plant technical documentation demonstrated that Cable 1B10BA was electrically protected by Breaker 1B52-10B.

The licensee's protection for the common enclosure associated circuit concern was found to be satisfactory.

(a) Cable Routing

Documentation (cable routing) review and physical in-plant inspection were performed on the following:

| Function | Component | Type Cable |
|---|---|---|
| Charging Pumps | 1/2-P2A | Power/Control |
| | 1/2-P2B | Power/Control |
| | 1/2-P2C | Power/Control |
| Auxiliary Feedwater Pumps | P-38A | Power/Control |
| | P-38B | Power/Control |
| Motor Drive Auxiliary Feedwater | MOV4009 | Power/Control |
| Pump Service Water Suction Valves | MOV4016 | Power/Control |

| | | |
|---|---|---|
| Service Water Pumps | P-32A | Power/Control |
| | P-32B | Power/Control |
| | P-32C | Power/Control |
| | P-32D | Power/Control |
| | P-32E | Power/Control |
| | P-32F | Power/Control |
| RCS Temperature | 1-TE450A | Instrument |
| | 1-TE450B | Instrument |
| | 1-TE451A | Instrument |
| | 1-TE451B | Instrument |
| Pressurizer Pressure | 1-PT420 | Instrument |
| | 1-PT420B | Instrument |
| | 1-PT430 | Instrument |
| Pressurizer Level | 1-LT427 | Instrument |
| | 1-LT428 | Instrument |
| | 1-LT433 | Instrument |

The cabling for the above components was found to meet the Appendix R, Section III.G.2 separation requirements or was addressed in approved exemptions.

e. Area That Did Not Meet Requirements of Appendix R, Section III.G.2

Fire Zone/Area 305/A24 was inspected and found not to meet the separation requirements of Appendix R, Section III.G.2. Specifically, less than 20 feet of separation existed between the redundant 4160V AC switchgear. Licensee exemption requests for the existing configuration have been denied by NRR. The licensee has proposed a dedicated capability, presumably with separate switchgear, using a gas turbine that is currently installed onsite. Based upon a proposed preliminary design, NRR has given tentative approval for the dedicated safe shutdown capability for the 4160 switchgear room.

This is considered an open item (266/87007-03; 301/87007-03) pending review and acceptance of the dedicated shutdown modification by NRR and installation of the approved modification by the licensee.

(1) Cable Modification

The licensee has an established program to ensure that cables are installed in accordance with Appendix R requirements. The following procedures are included in the licensee's controls:

| Procedure No. | Comment |
|---|---|
| QP:3-1, Modification Requests | Paragraph 2.12.6 requires review of modification requests for Appendix R concerns. |

| | |
|---|---|
| QP:3-2, Design Control | Design Control Form QP 3-2.2 requires circuit analysis for Appendix R concerns during the design process. |

In addition to the above procedures, the licensee has a computer program for tracking cables installed in the plant. During the inspection, the computer program was utilized repeatedly as a reference source and was found to accurately describe the facility cable installation.

The licensee's program for control of cables was found to be satisfactory.

f. Cold Shutdown

The licensee indicated to the inspector that the Unit 1 residual heat exchangers are located in the same fire zone adjacent to each other.

In 10 CFR Part 50, Appendix "R," Section III.G.1.b, it states "Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours."

As discussed on June 26, 1987, in a telephone conversation between G. Frieling, Wisconsin Electric and J. Holmes, NRC, the licensee was requested to identify where redundant equipment, utilized for cold shutdown, is in the same fire area where the three alternatives in III.G.2 are not utilized. The licensee was requested to provide the technical evaluation for each of these areas to NRR for review. This is considered an Open Item (266/87007-04; 301/87007-04) pending review and acceptance of the licensee's submitted technical evaluations to NRR.

g. Emergency Lighting

The Code of Federal Regulation 10 CFR Part 50, Appendix R, Section III.J states, "Emergency lighting units with at least an eight-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto."

The licensee's fire protection evaluation report in the section entitled "Technical Evaluation of Emergency Lighting Capability at Point Beach Nuclear Plant" requires that a procedure for periodic checking of installed emergency lighting units be implemented to ensure continued availability of adequate emergency lighting. The periodic checking procedures will include:

(1) Check of battery specific gravity (colored hydrometer disc location).

(2) Check and restoration of electrolyte level.

(3) Check of AC power supply

(4) Verification of automatic operation by pressing test switch simulating loss of AC power.

(5) Check of battery discharge voltage (underload).

The licensee also indicated that a periodic operability test, undertaken by simulating a loss of AC power and operating the lighting units for the full eight hour period, would not be performed for the following reasons:

(1) The periodic inspections/tests, associated acceptance criteria, and corrective actions are adequate to identify battery degradation, charging circuit malfunctions and/or lamp failures.

(2) Operating a lead acid battery in substantially discharged state (greater than 50%) or completely discharging the battery could result in damage to the battery plates. Performing long duration discharge tests that potentially result in either or these two conditions could degrade battery performance and necessitate premature battery replacement.

(3) Substantially discharging the battery units for test purposes will result in the battery units not having the required eight-hour performance capability until sufficient recharging of the battery is accomplished. As noted in Section 3, this could be for a period of up to 12 hours.

During the inspection, essential areas were checked for adequate emergency lighting. No deficiencies in emergency lighting unit placement was observed.

On May 6, 1987, seven emergency lights (emergency light Nos. 8, 29, 33, 28, 42, 44, and 45) were tested for eight hours with satisfactory results.

It was recommended to the licensee that the manufacturers instructions be followed with respect to conducting an eight hour discharge test. The licensee acknowledged the inspectors concern and indicated that the manufacturer will be contacted regarding the technical merits of conducting the eight hour discharge test.

3. Fire Protection Program

In addition to reviewing the licensee's compliance to Appendix R requirements a review of the routine fire protection program was conducted. The results of this review are as follows:

a. Fire Protection Organization

The licensee provided the inspector with the procedure entitled, "Fire Protection Organization," dated July 5, 1985, which indicated the following:

Vice President, Nuclear

The Vice President, Nuclear Power, reports to the President and Chief Operating Officer and is responsible for the overall administration of Point Beach Nuclear Plant (PBNP), including the Fire Protection Program. The Vice President delegates the administration of the PBNP Fire Protection Program to the Manager of PBNP.

System Fire Protection Officer and System Fire Protection Engineer

The System Fire Protection Officer (SFPO) is responsible for directing and formulating, implementing, and periodic auditing of all systems of the Fire Protection Program. The SFPO coordinates the fire protection related analysis, design, and administration activities of the Nuclear Systems Engineering and Analysis Section and Risk Management Division. The System Fire Protection Engineer assists the SFPO in performing these duties.

The inspector requested and was provided with a summary of the qualifications of the SFPO and SFPE. In the licensee's internal correspondence, dated May 14, 1987, to J. Knorr from M. Kaminski, it indicates the qualifications of the System Fire Protection Officer and System Fire Protection Engineer.

Based on the review of the qualifications of the System Fire Protection Officer and System Fire Protection Engineer having the duties outlined in the Fire Protection Organization Procedure no unacceptable items were noted.

Fire Protection and Safety Coordinator

In the Procedure entitled, "Fire Protection Organization," PBNP 1.7.5, Revision 13, dated July 5, 1985, the responsibilities of the Fire Protection Coordinator are identified as follows:

"The Fire Protection and Safety Coordinator who reports to the Manager - PBNP and the Superintendent - Operations, is responsible for the following:

Directing the overall day-to-day administration of the Fire Protection Program.

Conducting inplant tours to evaluate combustible material control, housekeeping effectiveness, and overall compliance with fire protection practices and procedures. Supervising the ignition control permit system and determining the need for fire watches when not specifically indicated.

Conducting periodic inspections and reviewing all Technical Specification, insurance carrier requirements, and acceptance tests of fire protection systems and brigade equipment, to ensure satisfactory standby operability.

Formulating and conducting classroom training, field training, fire brigade meeting, or fire drills in cooperation with inplant and outside agencies. Maintaining records and self-auditing to ensure timely completion. Composing and issuing memos as needed to quickly disseminate important information.

Reviewing fire protection related maintenance requests, expediting completion of the related work, and ensuring appropriate post-maintenance testing has been completed. Similarly, monitoring installation and assuring acceptance testing of new fire protection systems or equipment.

Promptly reviewing and revising the Fire Protection Manual, PBNP Fire Organization Manual, and all other tests, instructions, or procedures related to the Fire Protection Program.

Assisting auditors and inspectors involved in review of the Fire Protection Program; and acting as liaison to representative of outside agencies supplying fire protection related services to the plant.

Investigating and properly reporting all losses due to fire."

Based on the review of the Fire Protection and Safety Coordinator responsibilities outlined in the Fire Protection Organization, no unacceptable items were noted.

b. <u>Quality Assurance, Fire Protection Program</u>

In the Point Beach Operating License Amendment No. 39 (Unit 1) and Operating License Amendment No. 44 (Unit 2), Section 2.H, it states "The licensee is required to implement and maintain the administrative controls identified in Section 6 of the NRC's Fire Protection Safety Evaluation Report on the facility dated August 2, 1979 and supplements thereto."

In the Fire Protection Safety Evaluation Report dated August 2, 1979, Section 6.6, entitled, "Quality Assurance," it indicates that the February 1, 1978, letter from S. Burnstien, WE to E. Case, NRC, has been reviewed. The Fire Protection Safety Evaluation Report states:

"The design, procurement, installation, testing and administrative controls for the Fire Protection Program will be controlled in accordance with the Point Beach Nuclear Plant's 10 CFR Part 50, Appendix B, Quality Assurance Program, implementing the quality assurance provisions contained in Branch Technical Position 9.5-1, Appendix A.

We find that the quality assurance provisions conform to the NRC's guidance document, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance," and are, therefore, acceptable."

The inspector requested and was provided with the current applicable portions of the Quality Assurance Program dated November 16, 1984, for fire protection.

Based upon review of the current Quality Assurance Program (dated October 16, 1984) against the Quality Assurance Program (dated May 30, 1977) for Fire Protection, the current Quality Assurance Program for Fire Protection does not appear to include the licensee's commitments described in the licensee's February 1, 1978, letter. These commitments, which were identified as acceptable in the SER, are listed below:

° <u>Inspection</u>

In Section 10.1 of the Quality Assurance Program (effective June 30, 1977) it states "Procedures and practices are established and documented providing for appropriate inspection of activities affecting quality to verify conformance with the documented instructions, procedures, drawings or specifications for accomplishing the activity."

° <u>Corrective Actions</u>

In Section 16.1 of the Quality Assurance Program (effective June 30, 1977) it states "Procedures and practices are established and documented to assure that conditions adverse to quality; such as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances; are promptly identified and corrected."

° <u>Quality Assurance Records</u>

In Section 17.1 of the Quality Assurance Program (effective June 30, 1977) it states "Procedures and practices are established and documented to assure that sufficient records are generated and maintained to furnish evidence of activities affecting quality. Where practicable, the guidelines of ANSI N45.2.9 (1974) shall apply."

This is considered an open item (266/87007-05; 301/87007-05), pending further review of the licensee's Quality Assurance Program for Fire Protection by the Region III Quality Assurance Program Section. At this time no further action is required by the licensee.

c. Automatic Water Spray Protection of Doorless Entrance Ways

In the letter dated July 3, 1985, from E. Butcher, NRC to C. Fay, WE the NRC granted exemptions in several areas which allowed the use of a water curtain to protect doorless entrance ways from the products of combustion.

The inspector requested that the licensee justify the use of the water curtain to prevent the spread of products of combustion through the doorless entrance ways.

The licensee provided the inspector with a document that evaluated a water curtain in a doorless entrance way dated February 1982. The test indicated that, based on the endurance test of three hours, the dedicated water spray curtain was found acceptable by a certified testing laboratory.

Based on the acceptance of the water curtain in the exemption request and the supporting documentation by the licensee, this concern has been adequately addressed.

d. Component Cooling Water Pump Area Sprinkler System

The inspector questioned the design concept regarding the sprinkler system in the component cooling water pump area. In the licensee's internal correspondence dated February 26, 1987, from P. Glessner to J. Zach it states "The automatic sprinkler provided in this room does not meet specified position requirements as stated in NFPA Codes, but have been positioned and located so as to optimize performance with respect to activation time and distribution as stated in NFPA 13, Section 4-1.1.1(c). In addition, the existing obstructions in the room have been avoided as outlined in NFPA 13, Appendix B, Section B-4.2.3. After a field visit and walkdown of the system by Qualified Fire Protection Engineers, including a representative from Engineering Planning and Management, it was agreed that the position of the sprinklers in this area will effectively distribute extinguishing water around the non-combustible obstructions in the upper half of the room and also adequately protect exposure from transient floor based fires. In areas where a minor amount of combustible material exists above one of the sprinklers in question, a fire developing in that area would be controlled by the discharge from an adjacent sprinkler located at the ceiling level, thereby limiting the spread of the fire."

The inspector reviewed the component cooling water pump area sprinkler system drawing and walked down the area. Based on the licensee's review, statements, submitted material and the inspector's walkdown of the area, this concern is considered closed.

e. Fire Dampers

Several of the fire dampers located in firewalls at the Point Beach Nuclear Power Plant are expected to close under air flow conditions if activated by heat during a fire. The licensee provided the inspector with a fire damper summary which indicated several parameters which included whether the damper was tested under static or air flow conditions. The inspector requested that the licensee provide justification regarding the test methodology utilized to demonstrate that the dampers, expected to close under air flow, will function as required to maintain the integrity of the fire barrier.

The licensee indicated that a technical evaluation regarding the damper test will be developed and corrective action will be taken as found necessary to insure that the damper closes under air flow conditions if activated by an exposing fire. This is considered an open item (266/87007-06; 301/87007-06), pending review of licensee's Technical Evaluation by Region III.

In addition, the licensee committed to static test approximately 10% of the fire dampers every refueling outage. As discussed with the licensee, should a predetermined number of dampers fail, another 10% of the dampers will be tested until the amount of dampers failed are below the predetermined number. In addition, an engineering review would be conducted to evaluate the reasons for the damper failure.

4. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items are discussed in Paragraphs 2.c, 2.d, 2.e, 2.f, 3.b, and 3.e of this report.

5. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations.

6. Exit Interview

The inspector met with the licensee representative at the conclusion of the inspection on February 27 and May 7, 1987, and summarized the scope and findings of the inspection. The inspector discussed the likely content of this report and the licensee did not indicate that any information discussed during the inspection could be considered proprietary in nature.

In addition, on June 26, 1987, a conference call was held with Gary Frieling to discuss the results of the in-office review of documents discussed in this report.