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

December 20, 1978

Docket No. 50-302

Florida Power Corporation
ATTN: Mr. W. P. Stewart, Director
Power Production
P. O. Box 14042, Mail Drop C-4
St. Petersburg, Florida 33733

Gentlemen:

On November 28 through December 1, 1978, the NRC staff visited the Crystal River 3 Nuclear Station in order to review the fire protection program. The NRC staff concerns and accompanying positions which resulted from this review were discussed with Florida Power Corporation personnel during the December 1, 1978 exit meeting. Enclosure 1 delineates attendees at this meeting.

Enclosures 2, 3, and 4 itemize staff concerns which resulted from the review of Florida Power Corporation submittals made prior to the staff visit, from observations made during the visit, or from the review of information subsequent to the visit.

Since the site visit, the NRC staff has reviewed the list of questions which were transmitted under cover letter dated November 14, 1978 (Robert W. Reid to W. P. Stewart) with the result that some of the questions have been deleted. The deletion of the question is based on either the knowledge obtained during the site visit or by coverage in a staff position. This information has been transmitted to you by telecon on December 4, 1978. The outstanding questions will retain their numerical numbering as in the November 14, 1978 letter. These questions are listed on Enclosure 2.

Enclosure 3 describes staff positions discussed during the exit meeting for which Florida Power Corporation verbally agreed either to implement the position or to propose and justify an acceptable alternative solution. We request that you provide written comments and implementation schedules for the items in Enclosure 3 within 30 days of receipt of this letter. Enclosure 3 describes those staff positions discussed during the exit meeting for which Florida Power Corporation indicated a need for additional time for further consideration. You are requested to address each of these items by: (1) a commitment to implement the position; (2) a proposal of an acceptable alternative resolution with the basis and/or justification for same; or (3) providing a basis by which the present fire protection program addresses the positions without further action. Your response as well as implementation

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schedule for items in Enclosure 4 is also requested within 30 days of receipt of this letter. Include in your response a schedule for completion of all modifications contemplated for the fire protection program at Crystal River 3 Nuclear Station. The implementation schedules you provide should include design submittal dates for NRC review where appropriate, and should also include completion dates for modifications based on allowing 90 days for NRC review.

We are presently reviewing the administrative controls that you have proposed for your fire protection program. Any concerns and related positions that result from this review will be forwarded to you under separate cover.

If the NRC can be of assistance in the expeditious resolution of any of the enclosed concerns, please advise.

Sincerely,
Morton B. Fairtile for
Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:
As stated

Florida Power Corporation

cc: Mr. S. A. Brandimore
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ENCLOSURE NO. 1

List of Participants

NRC Staff

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W. H. Doyle
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ENCLOSURE NO. 2

Fire Protection Staff Review

Revised List of NRC Questions Request for Additional Information, NRC Staff Positions, and Request for Drawings

CRYSTAL RIVER 3 NUCLEAR STATION

Docket No. 50-302

1. Combined Fire and Security Emergency

Describe the responsibilities of key plant personnel, in the event of a combined fire and security emergency.

2. Fire Hazard Analysis

Discuss the capability to safely shut down the reactor in the event of a design basis fire in each plant fire area. This discussion should include:

(1) A description of the methods available to safely shut down the reactor and remove decay heat. The general functional requirements should include, but not be limited to:

(a) the ability to monitor and control primary system coolant inventory;

(b) the ability to monitor and control reactor neutron level, to assure subcriticality is maintained;

(c) the ability to remove decay heat to bring the plant to a cold shutdown condition;

(d) auxiliary services such as cooling water, lubrication, control air and HVAC for the components performing these general functions.

(2) A description of the electrical power and control requirements for each shutdown method.

(3) Deleted.

(4) A description of the system redundancy which exists to insure its capability to carry out its intended function. Describe any other systems which can alternatively perform the required function.

(5) Deleted.

The consequences of a design basis fire in each bounded fire area should then be evaluated to determine the effects of that fire on the plant's safe shutdown capabilities. A design basis fire is assumed to disable all equipment within a bounded fire area and all equipment associated with cabling passing through an area.

Provide the results of this evaluation, with its basis to include the consequences of a design basis fire in each bounded fire area with respect to the plant's safe shutdown capabilities. In those areas where a design basis fire could affect a safe shutdown, provide a summary of the existing and proposed fire protection for the area, and a justification of the adequacy of this fire protection. Fire protection for the area includes detection, suppression capabilities, flame retardant coating, physical separation, separation by marinite, separation by conduit, etc.

3. Instrument Air System

Verify that the effects of a fire on the instrument air system will not cause a transient more severe than those already analyzed in the FSAR.

4. Valve Concern

(1) Provide a list of remote operated valves, with their fail position, in safe shutdown systems identified in (No. 2).

(2) Discuss the possibility of fire induced faultings in electrical circuits causing such valves to fail in unsafe positions.

(3) Describe the provisions and accessibility to manually operate these valves, if necessary, during the shutdown operation.

(4) Since fire induced faultings could be a common mode failure, discuss the possibility that a fire in the cable spreading room, the control room, etc., could fail a certain combination of valves, in safety-related systems, in such positions as to cause an accident which is more severe than those analyzed in the FSAR.

5. Delete.

6. Delete.

7. Delete.

8. Delete.

9. Fire Brigade Equipment

Describe the equipment provided for the fire brigade. Describe means that will be used to either override the locking mechanism, or breach a barrier to provide fire brigade access and personnel egress in the event of a locking mechanism failure. Describe the training and tools provided for this purpose.

10. Shared Emergency Equipment

List the emergency equipment that is shared or proposed to be used by both the fire brigade and the security team. Provide the results of an analysis that demonstrates the number of units available and unit (or system) design is adequate to support a combined fire-security emergency.

11. Operation, Maintenance, and Testing Procedures

Provide a summary of the procedures established to control operation, maintenance and testing of fire protection (detection and suppression) systems and components.

12. Removal from Service Procedure

Provide a summary of the procedures established to control the disarming of any automatic or manually actuated fire protection system. Identify the management position responsible for authorizing the disarmament and the means used to assure the system is returned to normal.

13. Delete.

14. Delete.

15. Delete.

16. Delete.

17. Piping Containing Combustibles

Identify all piping containing flammable gas or combustible liquid which is routed through areas containing safety-related equipment, safety-related cables or through which personnel must pass to reach safety-related equipment for local operation. Provide an analysis to show that a fire involving the liquid or gas will not prevent safe shutdown or result in the loss of function of a safety-related system.

18. Delete.

19. Delete.

20. Delete.

21. Interface Between Safety and Non-Safety Equipment

Certain cables electrically connected to equipment necessary for safe shutdown may be used for functions designated as non-safety related and therefore classified as non-safety related. Examples of these might be remote indicating lights for valves breakers, etc. Describe whether such cables are kept with the safety division to which they were originally connected and if not, describe the effects on safe shutdown equipment due to shorts to these cables as a result of fire.

22. Delete

23. Prevention of Fire and Smoke Spread

Describe the manner in which fire and smoke are prevented from spreading from area to area via the normal and emergency ventilation systems in all parts of the plant areas. Describe the location, actuation method and fire rating of dampers used for fire and smoke control in both air supply and return air systems. Describe the details of interlocks for ventilation system shutdown or mode change that can be utilized for fire and smoke control.

24. Ventilation System Power and Control

Identify the areas where ventilation system power supply or controls are located within the area they serve. Provide the basis for leaving ventilation system power and control cables within the area they serve.

25. Prevent ng Recirculation of Ventilation Air

Describe the separation between the air intakes and exhausts for normal and emergency ventilation systems and the provisions which prevent smoke from being drawn back into the plant.

26. Automatic Operation of Fire Dampers/Doors

Discuss the provisions for automatic closure of ventilation fire dampers and fire doors for the cable spreading room and provisions for reopening the fire dampers remotely for smoke venting.

27. Delete.

28. Delete.

29. Fire Detection System Design

Provide design data for the automatic fire detection system in each fire area; including such items as type, number, and location of the detectors, and signaling, power supply and supervision of the system. Identify any deviation(s) from NFPA 72D.

30. Fire Suppression System Design

Provide the design data for all automatic suppression systems (both existing and proposed) including such items as design densities, soak times, power supplies, and associated alarms. Identify areas of non-compliance with appropriate NFPA standards.

31. Requirements for Manual Hose Stations

Provide the results of a study which verifies that the manual hose stations conform to all the recommendations contained in NFPA 14. Verify that all points of safety-related areas and other areas with major fire hazards can be reached with the hose line stored at the manual hose stations.

32. Pin-Type Hose Rack

Verify that the pin-type rack, if used, is approved to store the rubber lined hose by the hose manufacturer.

33. Fire Hazard at the Containment Cable Penetration

Identify the consequences on safe shutdown o. a fire at the cable penetration area on either side of the containment.

34. Deleted.

35. Deleted.

36. Deleted.

37. Radiological Consequences of a Fire

Evaluate the radiological consequences of a fire in radwaste areas and areas containing contaminated materials such as filter cartridges, spent resin, etc.

Plant Specific Concerns

Referenced page numbers in Florida Power Corporation's submittals are indicated in parenthesis following the question.

38. Clarify statement on 480 volt and D.C. power cable being in the same tray (5-11).

39. Deleted.

40. Deleted.

41. Deleted.

42. Deleted.

43. Deleted.

44. Deleted.

45. Deleted.

46. Resolve difference in separation of cable trays as noted in Page 5-44 as contrasted with those noted on Page 5-12, 13, and 14 (5-44).

47. Deleted.

48. Deleted.

49. Deleted.

50. Deleted.

51. Deleted.

52. Deleted.

53. Deleted.

54. Deleted.

55. Provide list of safety related and non-safety related cables located in concealed ceiling above control room; provide fire analysis for this space.

56. When will the results of the planned cable fire tests be provided (Page 5-9)?

57. Will all parts of the fire detection and signalling system, including individual fire detectors, continue to function if normal AC and DC power sources are interrupted? Clarification is required (Page 5-18).

58. Are the hose threads on yard hydrants and interior fire hose stations compatible with the local public fire departments (Page 5-25)?

59. Deleted.

60. Deleted.

61. Deleted.

62. Deleted.

63. Deleted.

64. Deleted.

65. Deleted.

66. The function of redundant cables and the effect of their loss on safe shutdown should be identified in the following areas:

    A. Battery Charger Room 3A
    B. Inverter Room 3B
    C. Inverter Room 3A
    D. Heating and Ventilation MCC Area (IB, 119, A/Z4)
    E. Personnel Access Area (IB, 119, A/Z5)
    F. Hallway (AB, 95, A/Z1)
    G. Hallway (AB, 95, A/Z5)
    H. Hallway (AB, 95, A/Z8)
    I. Miscellaneous Radwaste Rooms (AB, 95, A/Z10 and 12)
    J. Open Area (AB, 95 A/Z13)
    K. Reactor Coolant Evaporator Room (AB, 95, A/Z14)
    L. RCP Seal Injection Filter Room (AB, 95, A/Z15)
    M. Equipment Hatch Area (AB, 95, A/Z16)
    N. Sea Water Pump Room (AB, 95, A/Z17)
    O. Pump and Tank Room (AB, 95, A/Z32)
    P. Nuclear Service Heat Exchanger Room (AB, 95, A/Z33)
    Q. Hallway and Stairwell (AB, 119, A/Z1)
    R. Hallway (AB, 119, A/Z5)
    S. Penetration Area (AB, 119, A/Z7)
    T. Equipment Hatch Area (AB, 119, A/Z18)
    U. Area Outside Reactor Compartment (RB, 95, A/Z1)

67. Deleted.

68. Provide information on the plant breathing air supply, per the requirements of Appendix A to BTP 9.5-1.

69. Will the deluge system remain functional upon loss of D.C. power (Page 5-27)? Will the loss of D.C. voltage negate the automatic start action of the fire service water pumps (Page 5-23)?

70. Deleted.

71. How often and by what means are "POC" interlocks tested for the reactor building purge supply and exhaust fans (Page 5-31)?

72. Document that all portions of the fire signaling system is electrically supervised.

REQUEST FOR ADDITIONAL INFORMATION

1. Provide plans for proposed fire and smoke detection systems for inside the reactor building, auxiliary building, and intermediate buildings.

2. Deleted.

3. Deleted.

4. Provide information on proposed installation of redundant halon system in cable spreading room.

5. Deleted.

6. Provide details of reactor coolant pumps enclosure and oil collection system.

NRC STAFF POSITIONS

PF-1. There are several areas in the fire safety evaluation which contain safety-related equipment or cable trays for which no fire detection is provided or proposed. Fire detection should be provided for such areas having significant combustibles which appears to include:

A. Heating and Ventilation MCC Area (IB, 119, A/Z4)
B. Neutralizer Room (AB, 95, A/Z6)
C. Reactor Coolant Evaporator Room (AB, 95, A/Z14)
D. Waste Transfer Pump Room (AB, 95, A/Z19 and 20)
E. Decant and Slurry Pump Rooms (AB, 95, A/Z21, 22, and 23)
F. Waste Gas Rooms (AB, 95, A/Z24 and 25)
G. Waste and Recycle Pump Rooms (AB, 95, A/Z26, 27, and 28)
H. Nuclear Sampling Room (AB, 95, A/Z34 and 35)
I. Seal Return Coolers and Makeup Tank Rooms (AB, 119, A/Z11, 12 and 13)
J. Decontamination Room (AB, 119, A/Z19)
K. Control Rod Drive Cooling Water Filter Room (AB, 119, A/Z23)

REQUEST FOR DRAWINGS

Florida Power Corporation is requested to transmit the following drawings:

1. fire protection drawings for proposed fire suppression system;
2. fire protection drawings for proposed fire detection systems.

ENCLOSURE NO. 3

Results of Staff Concerns Site Visit Meetings

Fire Protection Staff Review Positions (SRP)
Which the Licensee Agreed To Implement

CRYSTAL RIVER 3 NUCLEAR STATION

Docket No. 50-302

SRP-2	Post Indicator Valves Traffic Guards
SRP-3	Fire Pump House Protective Curbing
SRP-6	Remote Safe Shutdown Valve Control
SRP-7	Fire Emergency Radio Communication
SRP-8	Control Room Chart Storage
SRP-10	Computer Printout Storage
SRP-11	Computer Tape Storage
SRP-12	Non-Smoking Requirements
SRP-13	Trash Containers
SRP-14	Fire Door Mechanisms
SRP-15	Control Room Door
SRP-16	Control Room Fire Extinguishers
SRP-18	Control of Combustibles
SRP-19	Dedicated Safe Shutdown Panel
SRP-22	Cable Spreading Fire Barrier Insulation
SRP-23	Diesel Generator Rooms Protective Curbing
SRP-25	Diesel Generator Control Room Smoke Detector
SRP-28	Low-Level Waste Storage
SRP-32	Hot Machine Shop/Auxiliary Building Fire Barrier
SRP-33	Fire Retardant Wood
SRP-34	Piping and Conduit Penetrations
SRP-35	Gas Cylinder Storage

NOTE: The following Staff Review Postions were resolved and deleted during the final Staff Concerns Site Visit Meeting and therefore, do not appear in Enclosure 3 or 4; Numbers 5, 29, 30, 36, and 40.

SRP-2 - Post Indicator Valves Traffic Guards

Staff Concern

Traffic guards should be provided for post indicator valves to eliminate possible vehicular damage to the post indicator valves.

Staff Position

Provide traffic guards for post indicator valves.

SRP-3 - Fire Pump House Protective Curbing

Staff Concern

Curbing should be provided in the fire pump house floor drains system to separate the floor drains from the diesel fire pumps in case of diesel fuel oil tank or line break.

Staff Position

Provide curbing across fire pump house for postulated break in diesel fuel oil line.

SRP-6 - Remote Safe Shutdown Valve Control

Staff Concern

Timely and proper safe shutdown could be compromised due to the relative inaccessibility of certain important valves and the requirement to operate these valves manually without benefit of affected parameter indications at the valve station.

Staff Position

Provide controls at remote shutdown panel, which meet power supply separation criteria for auxiliary feedwater control valves, auxiliary feed pump steam supply valves and atmospheric relief valves.

SRP-7 - Fire Emergency Radio Communication

Staff Concern

Two-way voice communication is vital to safe shutdown and emergency response in the event of fire.

Staff Position

Two portable radios should be readily available for fire emergency situations.

SRP-8 - Control Room Chart Storage
Staff Concern

Paper chart storage in the SE corner of the control room is in a safety-related area and presents an unprotected fire hazard.

Staff Position

Chart storage area in the SE corner of control room should be moved to an appropriate non-safety related area and/or properly sprinkled storage area.

SRP-10 - Computer Printout Storage
Staff Concern

Computer printout data paper is stored in the control room is in a safety-related area and presents an unprotected fire hazard.

Staff Position

Utilize enclosed metal cabinets for storage of computer printout data.

SRP-11 - Computer Tape Storage
Staff Concern

Computer tape storage in the control room is in a safety-related area and presents an unprotected fire hazard.

Staff Position

Relocate computer tape storage from behind control panel to an appropriate non-safety related area.

SRP-12 - Non-Smoking Requirements
Staff Concern

Smoking in safety-related areas should be eliminated to preclude the possibilities of a fire in safety-related areas.

Staff Position

Enforce non-smoking requirements in safety-related areas. Of particular concern was the evidence of smoking found inside main control panels, etc.

SRP-13 - Trash Containers
Staff Concern

Approved metal trash containers with self-closing metal lids should be utilized throughout the plant in safety-related areas.

Staff Position

Replace plastic trash containers with approved metal trash containers.

SRP-14 - Fire Door Mechanisms
Staff Concerns

Fire doors should be operable with automatic closures and functional door latching mechanisms.

Staff Position

Insure that all fire door mechanisms are operable.

SRP-15 - Control Room Door
Staff Concern

The door between the control room and hallway should be equipped with a closure device which will close the door on actuation of the fire detection system and/or control room ventilation recirculation.

Staff Position

If it is necessary to leave the door open between control room and hallway, provide a device to hold door open which will close the door automatically on actuation of fire detection and/or ventilation recirculation. Utilization of a security guard for this purpose is satisfactory until an automatic closing, security/fire door has been installed.

SRP-16 - Control Room Fire Extinguishers
Staff Concern

The present fire suppression in the control room may not be adequate for combating small deep-seated fires.

Staff Position

Provide 2 water and/or Halon 1211 extinguishers at doorways at main control cabinets.

SRP-18 - Control of Combustibles

Staff Concern

Unnecessary combustibles were observed in several areas of the plant. The conditions observed constituted an unnecessary and unevaluated fire loading which could impact on safety-related systems.

Staff Position

All waste, debris, scrap, rags, oil spills, or other unnecessary combustibles resulting from work activity in safety-related areas should be removed following completion of the activity or at the end of the work shift (whichever is sooner). Administrative procedures should be established to control combustibles in safety-related areas. The unnecessary combustibles in the following areas should be removed:

- Diesel Generator Room
- Control Complex Ventilation Room
- 4160 B Switch Gear Room
- Main Exhaust Filter Room
- Spent Fuel Cooler Room

SRP-19 - Dedicated Safe Shutdown Panel

Staff Concern

The ability to accomplish safe shutdown could be compromised due to fire in either the cable spreading room or control room since instrumentation and control cables necessary for safe shutdown cannot be isolated from these areas.

Staff Position

Provide a dedicated safe shutdown panel for control of principal equipment with sufficient monitoring information to affect safe shutdown of reactor considering loss of control room and/or cable spreading room and loss of offsite power (include consideration of SPR-6).

SRP-22 - Cable Spreading Room Fire Barrier Insulation

Staff Concern

The metal plates which serve as fire barrier penetration in the ceiling of the cable spreading room may not be sufficient to prevent the spread of a postulated fire between safety-related areas.

Staff Position

Provide fire barrier insulation on underside of metal plates located in cable spreading room ceiling.

SRP-23 - Diesel Generator Rooms Protective Curbing

Staff Concern

A diesel fuel oil spill fire could spread from the diesel generator rooms into the diesel generator control rooms and the diesel generator air handling rooms which could cause fire damage and/or render them inaccessible.

Staff Position

Provide curbing at the two doors leading from diesel generator rooms to diesel generator control rooms and between the diesel generators air handling rooms.

SRP-25 - Diesel Generator Control Room Smoke Detector

Staff Concern

The lower smoke detector located in the diesel generator control room is not effective in its present location.

Staff Position

Relocate the smoke detector to high bay in diesel generator control room(s).

SRP-28 - Low Level Waste Storage

Staff Concern

Fire hose reels should be maintained to have free access at all times in cases of fire emergency.

Staff Position

Relocate low-level waste storage at the drumming station to permit free access to hose reel.

SRP-32 - Hot Machine Shop/Auxiliary Building Fire Barrier

Staff Concern

A postulated fire in the hot machine shop could spread into a safety-related area.

Staff Position

Provide a three-hour rated fire barrier between hot machine shop and auxiliary building hallway.

SRP-33 - Fire Retardant Wood

Staff Concern

Unnecessary combustible fire loading was found to be stored and/or scattered inside and outside the plant which may impact on safety-related equipment or components in the area.

Staff Position

All untreated lumber and wood items in safety-related areas should be removed. All lumber/wood required to be used in such areas should be treated fire retardant lumber and should be limited to temporary use, to be removed when no longer needed. Large wooden timbers may be coated with a U.L. listed fire retardant compound having a flame spread rating of 25 or less.

SRP-34 - Piping and Conduit Penetrations

Staff Concern

Fire stops should be provided for piping and cable penetrations to negate the possibility of fire propagation between areas.

Staff Position

Piping and conduit penetrations between turbine building and safety-related areas should be upgraded to three hours, for example, the penetrations found on elevation 117 feet.

SRP-35 - Gas Cylinder Storage

Staff Concern

Potentional missile damage to safety-related equipment or components from improperly stored cylinders.

Staff Position

Gas cylinders should be stored in racks designated for that purpose. Storage should be in the approved manner.

ENCLOSURE NO. 4

Results of Staff Conserns Site Visit Meetings

Fire Protection Staff Review Postions (SRP)
Which the Licensee Agreed to Consider

CRYSTAL RIVER 3 NUCLEAR POWER STATION

Docket No. 50-302

SRP-1	Reactor Containment - Hose Stations
SRP-4	Fire Brigade Training
SRP-9	Control Room Kitchenette
SRP-17	Emergency Lighting
SRP-20	Station Battery Ventilation
SRP-21	Cable Spreading Room Floor
SRP-24	Diesel Generator Floor Drains
SRP-26	Make Up Pump Rooms and Emergency Feedwater Pump Areas
SRP-27	Low Level Solid Waste Drumming Station
SRP-31	Penetration Barriers
SRP-37	Safety-Related Systems
SRP-38	Fire Brigade
SRP-39	Loss of Normal and Emergency Lighting
SRP-41	Reactor Coolant Pumps Oil Collection System
SRP-42	Diesel Generator Fuel Oil
SRP-43	Cable Spreading Room Circulating Fan

SRP-1 - Reactor Containment - Hose Station

Staff Concern

Fixed manual fire fighting capability should be located throughout containment for any required manual fire fighting operations.

Staff Concerns

A standpipe system should be provided with a sufficient number of hose stations in order that all areas of the containment can be reached by a maximum of 100 feet of 1½ inch hose at each hose station.

SRP-4 - Fire Brigade Training

Staff Concern

Basic training is a necessary element in effective fire fighting operations. To operate effectively, the fire brigade must function as a team.

Staff Position

Fire brigade training should include the following:

(1) Regular planned meetings held every three months which repeat the classroom instruction program over a two-year period.

(2) Practice sessions at regular intervals, but not to exceed one year for each brigade member.

(3) Drills performed at regular intervals, but not to exceed three months for each brigade. At least one drill per year to be performed on a "back shift" for each brigade. Each individual member of the fire brigades shall participate in at least two drills per year. A sufficient number of these drills, not less than one per year for each brigade, should be announced to determine the fire readiness of the plant fire brigade leader, fire protection system, and equipment. The minimum number of fire brigade drills conducted within a period of three months shall be equal to the number of operating shifts at the station.

SRP-9 - Control Room Kitchenette

Staff Concern

The control room kitchenette is located in a safety-related area and presents an unprotected fire hazard.

Staff Position

Remove stove, kitchen equipment and kitchen cabinets from behind control panels.

SRP-17 - Emergency Lighting
Staff Concern

Emergency lighting could not be identified in all areas containing safety-related equipment which must be used for safe shutdowns.

Staff Position

Emergency lighting should be provided in areas that must be manned for safe shutdown and for access and egress routes to and from all fire areas. Safe shutdown areas include those required to be manned if control room must be evacuated.

S P-20 - Station Battery Ventilation
Staff Concern

Failure of exhaust ventilation in battery rooms could lead to build-up of explosive hydrogen concentrations.

Staff Position

Relocate exhaust ducting to ceiling of battery room. Provide air flow monitoring on battery room exhaust by surveillance or alarm system.

SRP-21 - Cable Spreading Room Floor
Staff Concern

The metal plates which serve as the floor of the cable spreading room and also as fire barriers between safety-related areas may not be sufficient to prevent the spread of a postulated fire between the safety-related areas.

Staff Position

Assure that the cable spreading room floor has at least a one-hour fire rating.

SRP-24 - Diesel Generator Floor Drains
Staff Concern

Fire could spread between the diesel generator rooms via the floor drain system.

Staff Position

Provide separation of the floor drain system between diesel generator rooms.

SRP-26 - Make Up Pump Rooms and Emergency Feedwater Pump Areas

Staff Concern

Fire in safety-related areas could go undetected and unabated without an automatic fire detection and suppression system.

Staff Position

Provide automatic sprinkler suppression system for make-up pump rooms and steam driven emergency auxiliary feedwater pump area. As an alternative, provide fire detection and suitable ½-hour barrier around safety-related cables.

SRP-27 - Low Level Solid Waste Drumming Station

Staff Concern

The low level solid waste drumming station and the accumulation of solid waste in the area interfers with the operation of the fire hose reel in the area and is adjacent to safety-related motor control centers.

Staff Position

Relocate low level solid waste drumming station or provide automatic sprinkler suppression that will not affect adjacent safety-related motor control center.

SRP-31 - Penetration Barriers

Staff Concern

The cable penetration barriers may not be adequate to prevent a fire from propagating through the barriers.

Staff Position

Provide information to substantiate a fire resistance rating of 3 hours for cable penetration seals in fire barriers. Include detailed drawings with response information. Upgrade all penetrations where necessary to be compatible with the fire barrier rating for the area.

SRP-37 - Safety-Related Systems
Staff Concern

Fire in certain areas of the auxiliary building and intermediate building could destroy redundant division cables required for safe shutdown before it is detected and manually suppressed.

Staff Position

Certain areas contain significant concentrations of electrical cables and conduit from both ESF channels. Provide drawings and the results of an analysis which demonstrates that redundant safety-related systems will not be damaged by an unsuppressed fire in these areas. As an alternative, provide automatic sprinkler protection for cable trays and other combustibles in these areas.

Your analysis should include at least the following areas:

- Fire Zones 1, 5, and 13, Auxiliary Building, Elevation 95';
- Fire Zones 1, 2, 3, 4, and 5, Intermediate Building, Elevation 114';
- Fire Zones 1, 5, 18, and 26, Auxiliary Building, Elevation 114'.

Provide drip protection for safety-related electrical equipment in any area where automatic sprinkler systems are installed.

SRP-38 - Fire Brigade
Staff Concern

The present proposal for manning the fire brigade is not considered adequate to successfully combat the types of fires that could be expected to occur.

Staff Position

A fully-trained five-man fire brigade should be provided.

Licensee disagreed with Staff Position and will provide his written position.

SRP-39 - Loss of Normal and Emergency Lighting
Staff Concern

Normal and/or emergency lighting is required in safety-related areas to illuminate these areas for fire fighting and for normal and emergency exits.

Staff Position

Provide the results of a study identifying any safety-related areas where a fire could cause a loss of both normal and emergency lighting so that fire fighting access would be hampered. In such areas, either rearrange existing lighting circuits to eliminate the condition; or install battery powered lighting units.

SRP-41 - Reactor Coolant Pumps Oil Collection System
Staff Concern

An oil leak on a reactor coolant pump in the containment building could result in an undetected fire which could cause damage to safety-related equipment.

Staff Position

Provide an oil collection system for reactor coolant pumps equivalent to the maximum quantity of oil that could escape from the pumps in the event of a pipe rupture. Provide administrative controls which will ensure that the oil drain system will be properly lined up to the oil drain collection tanks.

SRP-42 - Diesel Generator Fuel Oil
Staff Concern

A break in the diesel generator fuel oil piping or fuel oil day tanks could cause a substantial loss of oil to the diesel generator rooms and could go unabated for a substantial period of time.

Staff Position

Provide a means to ensure a leak or break in the diesel generator fuel oil piping or day tank would be automatically detected in the control room.

SRP-43 - Cable Spreading Room Circulating Fans
Staff Concern

Cable spreading room fire suppression effectiveness is placed on the cable spreading room circulating fans.

Staff Position

Power source for circulating fans in the cable spreading room should be from essential power supply.