



**Florida  
Power**  
CORPORATION

February 4, 1987  
3F0287-01

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

Subject: Crystal River Unit 3  
Docket No. 50-302  
Operating License No. DPR-72  
Fire Protection Program Revisions

Dear Sir:

Attached is the Florida Power Corporation (FPC) response to the Staff's question 3 regarding FPC fire protection evaluation submittals of July 25, 1985 and December 19, 1985. For completeness, the previously submitted emergency lighting evaluation, the subject of question 3, is attached.

Sincerely,

E. C. Simpson  
Director, Nuclear Operations  
Engineering and Licensing

RMB/feb

Attachment

xc: Dr. J. Nelson Grace  
Regional Administrator, Region II

Mr. T. S. Stetka  
Senior Resident Inspector

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**Question 3:**

Are the verification and remedial operations referenced in the discussion on emergency lighting part of the plant shutdown procedures? If so, provide additional justification as to why Section III.J. of Appendix R to 10 CFR 50 is not met?

**Response 3:**

The following tabulation identifies operator actions from Abnormal Procedure, AP-990, "Shutdown from Outside Control Room", and the availability of emergency lights. This is the only plant shutdown procedure specifically entered due to a fire occurrence. For fires that do not result in Control Room evacuation, shutdown would be carried out only in the event that actual fire damage causes a plant trip. In that case the procedures used by the operators to complete shutdown would be based on the symptoms or conditions existing due to damaged or failed equipment.

The symptom based procedures in place at CR-3 are not generally written to address a specific scenario such as Appendix R, but are designed to cover a number of possible initiating events and combinations of events. Therefore, the procedures list options for achieving a desired end state. As a result, steps will appear in procedures other than AP-990 which could be used to achieve shutdown post fire for which no 8-hour battery powered lights are available. FPC has installed emergency lights in those areas requiring access for performing shutdown with the protected hot shutdown equipment in accordance with Appendix R requirements.

OPERATION	LOCATION	EMERGENCY LIGHTS
Open CRDM Breakers	CRDM Room	YES
Trip Main Turbine	143' Turbine Bldg.	NO 1
Start EFP 1&2	EFIC Rooms A and B	YES
Isolate Main FW	EFIC Rooms A and B	YES
Isolate Main Steam	EFIC Rooms A and B	YES
Start EM Diesel Generators	Diesel Generator Control Rooms	NO 2
Man Remote Shutdown Panel	Remote Shutdown Room	YES
Transfer Control to Remote Shutdown Panel	A and B 4160V SWGR Rooms	YES
Check 4160V Breaker Alignment	A and B 4160V SWGR Rooms	YES
Monitor EM Diesel Generators	Diesel Generator Control Rooms	NO 2
Perform Verification Procedure VP-580	Control Room	3
Control Atmospheric Dump Valves	Remote Shutdown Room	YES
Establish letdown (to a bleed tank if possible)	Remote Shutdown Room	YES
OR		
Ensure MUV 53 and MUV 257 are open	Remote Shutdown Room	YES
AND		
Establish letdown or seal return	Remote Shutdown Room	YES



OPERATION	LOCATION	EMERGENCY LIGHTS
Trip RCP Breakers	6900V SWGR Room	YES
Start RCP Lift Oil Pumps	Intermediate Bldg. 119' Eiev.	NO 4
Operate condensate pump locally discharging to condensate tank	Turbine Bldg.	NO 4
Shutdown FW Booster, air removal and circulating water pumps	Turbine Bldg.	NO 4

Notes:

1. Not necessary to achieve hot shutdown and would occur when main steam is isolated (third step following in this tabulation).
2. Protection is provided to assure start and operation of at least one diesel generator automatically. This is not a required step.
3. AP-990 notes that all verifications in VP-580 (normal post trip verification procedure) may not be possible outside the Control Room. The verifications of VP-580 are not necessary to achieve hot shutdown.
4. These functions would not be available on loss of offsite power and are therefore not taken credit for or necessary to achieve hot shutdown.

## EMERGENCY LIGHTING EVALUATION

### REQUIREMENT (10 CFR 50, Appendix R, Section III.J.)

"Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto."

### GUIDANCE (Generic Letter 85-01, Section 4.1)

The level of illumination provided by emergency lighting in access routes to and in areas where shutdown functions must be performed is a level that is sufficient to enable an operator to reach that area and perform the shutdown functions. At the remote shutdown panels the illumination levels should be sufficient for control panel operators.

### EVALUATION

#### A. EMERGENCY BATTERY PACK LIGHTING

Procedures for shutdown in the event of a fire have been reviewed to determine what operations must be performed outside the main control room. These operations have been categorized as follows:

- 1) Required Operations
- 2) Verification Operations
- 3) Remedial Operations

Required operations are those actions which must be taken to initiate or maintain shutdown operations according to the Appendix R design. Emergency 8-hour battery pack lights have been installed to provide access to, egress from and lighting in areas where required operations will be performed.

Verification operations are actions taken as a matter of good practice, and include items such as independent verification of control rod insertion or turbine trip. These actions are not considered vital since the components necessary to achieve these functions are protected from the effects of fire. Emergency 8-hour battery pack lights are not provided for these operations by design. However, many of these operations are performed in areas where battery pack lighting is provided for required operations, or alternate lighting provisions are available.

Remedial operations are those actions which may be taken to mitigate the effects of spurious operations. Spurious operations have been identified and evaluated; however, since their occurrence is highly unlikely, emergency 8-hour battery pack lighting has not been provided by design. Alternate lighting provisions are available for remedial operations.

## **B. ADDITIONAL EMERGENCY LIGHTING**

In addition to emergency 8-hour battery pack lights, areas throughout the Reactor, Auxiliary, Intermediate and Turbine Buildings are provided with normal plant lighting fixtures which are automatically supplied power from the emergency diesel generators in the event of loss of normal sources. These lights will be available to provide access/egress and operational lighting for verification and remedial operations.

## **C. DEDICATED HAND HELD LIGHTS**

Three storage locations are provided for dedicated hand held lights (flashlights). The storage locations are:

- 1) Near the Remote Shutdown Panel - Control Complex El. 108'
- 2) Near the elevator - Auxiliary Building El. 95'
- 3) Near the Condensate Demineralizers - Turbine Building El. 119'

These lights are not to be used for any purpose except supplemental lighting in the event of a fire. These lights are included in the periodic preventative maintenance program under Preventative Maintenance Procedure PM-110, Miscellaneous Plant Batteries.

## **CONCLUSION**

The number and placement of 8-hour battery emergency lighting units is sufficient to provide access to, egress from, and illumination for operations, outside the main control room which are necessary for safe shutdown. Additional diesel backed emergency lights and hand held lights will provide illumination for verification and remedial operations which will be performed as a matter of good practice. This design meets or exceeds the requirements of 10 CFR 50, Appendix R, Section III.J., and provides a dependable emergency lighting system.