

Mr. Roy A. Anderson
 Senior Vice President
 Nuclear Operations
 Florida Power Corporation
 ATTN: Manager, Nuclear Licensing
 Crystal River Energy Complex (SA2A)
 15760 W Power Line Street
 Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER 3 - DENIAL OF EXEMPTION FROM CERTAIN REQUIREMENTS OF
 10 CFR PART 50, APPENDIX R, FIRE PROTECTION PROGRAM FOR NUCLEAR
 POWER FACILITIES (TAC NO. M95817)

Dear Mr. Anderson:

By letter dated June 21, 1996, as supplemented November 22, 1996, you requested an exemption from the technical requirements of 10 CFR Part 50, Appendix R, Paragraph III.J, to permit the use of normal AC-powered lighting in lieu of battery powered lighting in certain areas for operation of safe shutdown equipment.

We have reviewed your request and determined that special circumstances are not present. Your request is, therefore, denied. The enclosed safety evaluation (SE) provides the basis for our denial.

Please note that the enclosed SE does not address your request for exemption from Appendix R, Section III.G.2.c, for the use of enhanced sprinkler protection in certain areas instead of fire barrier upgrade. This request will be addressed separately.

Sincerely,

L. Raghavan, Project Manager
 Project Directorate II-3
 Division of Reactor Projects - I/II
 Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Safety Evaluation

cc w/enclosure: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001
October 29, 1997

Mr. Roy A. Anderson
Senior Vice President
Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Licensing
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Crystal River, Florida 34428-6708

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Sincerely,

A handwritten signature in black ink, appearing to read "F. Hebdon".

Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Safety Evaluation

cc w/enclosure: See next page

Mr. Roy A. Anderson
Florida Power Corporation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PLANT SYSTEMS BRANCH

DIVISION OF SYSTEMS SAFETY AND ANALYSIS

DENIAL OF LICENSEE REQUEST FOR EXEMPTION FROM

SECTION III.J OF APPENDIX R TO 10 CFR PART 50

CRYSTAL RIVER UNIT 3

DOCKET 50-302

1. INTRODUCTION

Title 10 of the Code of Federal Regulations Part 50 (10 CFR Part 50), Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 3 "Fire Protection," specifies that "Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions." 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," sets forth the fire protection features required to satisfy the general design Criterion 3 of the Commission's regulations. Section III.J of Appendix R to 10 CFR Part 50 requires that 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.

By letter dated June 21, as supplemented November 22, 1996, Florida Power Corporation (FPC or the licensee), the licensee for Crystal River Unit 3 (CR3), submitted a request for exemptions from certain technical requirements specified in Appendix R, Sections III.J and III.G.2.c, relating to emergency lighting and the use of degraded fire barriers with enhanced sprinkler systems respectively.

This safety evaluation does not address the licensee's request for an exemption from the technical requirements of Section III.G.2.c of Appendix R.

2. EXEMPTION REQUEST - EMERGENCY LIGHTING

The licensee requested an exemption from the technical requirements of Section III.J of Appendix R relating to battery powered lighting in areas needed for

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the operation of safe shutdown equipment. This exemption request is for various fire areas in the auxiliary, control complex, intermediate, and turbine buildings. The licensee has proposed to use the normal or essential AC powered lighting for most of the areas that are the subject of this request, and portable battery powered lighting units for one area on elevation 95 of the auxiliary building.

3. DISCUSSION

The exemption request addressing emergency lighting is for the following plant areas:

Auxiliary building AB-95-3:

Operator actions in areas not provided with battery powered emergency lighting consist of operating a maximum of two valves within 4 hours following a fire in this fire area or other plant areas to maintain hot standby conditions and for cooldown to cold shutdown. The valves, which are motor operated with handwheels, are associated with the makeup system and are located near the floor level. As operator actions in this area may be required following a fire in this area, both the normal plant lighting and battery powered emergency lighting could be damaged. The licensee has proposed the use of portable hand held lighting to perform the required operator actions in this area.

Auxiliary building AB-119-6:

Operator actions in areas not provided with battery powered emergency lighting consist of operating a maximum of two valves within 1 hour following a fire outside of this fire area to maintain hot standby and to achieve cold shutdown. The valves, which are manually operated valves equipped with handwheels, are used for isolation of the letdown line. The licensee has proposed that in lieu of providing an additional nine battery powered emergency lighting units, the use of the normal plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the normal plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required in this area.

Control complex CC-124-111:

This area is the control rod drive/relay room. The operator action in the area not provided with battery powered emergency lighting consists of positioning one switch on an electrical distribution panel to de-energize the pressurizer pilot-operated relief valve (PORV) to mitigate the potential spurious opening of the valve. This action would be performed within 1 hour following a fire outside this area. The licensee has proposed that in lieu of providing two additional battery powered emergency lighting units, use of the normal plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the normal plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required.

Control complex CC-145-118B:

This area is the main control room, which is continuously manned. Operator actions on panels not provided with battery powered emergency lighting consist of positioning five switches to achieve hot standby. This action would be performed within 1 hour following a fire outside the control room. The licensee has proposed that in lieu of providing two additional battery powered emergency lighting units, the use of the essential plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the essential plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required.

Intermediate building IB-119-201:

Operator actions in areas not provided with battery powered emergency lighting consist of operating a maximum of two valves associated with the emergency and auxiliary feedwater systems to achieve hot standby. These actions would be performed following a fire in the auxiliary building, control complex, or lower level of the intermediate building. The valves are located at the floor level. The licensee has proposed that in lieu of providing 14 additional battery powered emergency lighting units, the use of the normal plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the normal plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required.

Turbine building TB-95-400:

The operator action in the area not provided with battery powered emergency lighting consists of positioning a switch on an electrical distribution panel to de-energize the pressurizer PORV to mitigate the potential spurious opening of the valve. This action would be performed within 1-hour following a fire outside of this area. The licensee has proposed that in lieu of providing four additional battery powered emergency lighting units, the use of the normal plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the normal plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required.

Turbine building TB-119-400:

The operator action in the area not provided with battery powered emergency lighting consists of positioning a switch for the auxiliary feedwater pump to achieve hot standby and for cooldown. The licensee has proposed that in lieu of providing an additional battery powered emergency lighting unit, the use of the normal plant lighting system would be an acceptable alternative to satisfy the underlying purpose of the regulation. The licensee has concluded that the normal plant lighting for this area would be available following a fire in any of the plant areas where operator actions would be required.

The technical requirements of Section III.J of Appendix R are not met because emergency lighting with at least an 8-hour battery power supply is not provided in all plant areas needed for access to and operation of safe shutdown equipment.

4. EVALUATION

Fires in several plant areas could result in operator actions in areas of the auxiliary building, control complex, intermediate building and turbine building which are not adequately covered by the plant's existing battery powered emergency lighting units. The emergency lighting requirements specified in Section III.J of Appendix R to 10 CFR Part 50 are to aid plant personnel in the access to and egress from plant areas containing equipment and components that must be manually operated during plant emergencies, including, but not limited to, fire incidents. The installation of fixed 8-hour battery powered lighting units allows sufficient time for the restoration of normal lighting, should it become unavailable, with a margin for unanticipated events.

The licensee's proposal to use normal, essential or portable battery powered lighting in these areas is not considered prudent by the staff. Although normal and essential lighting may not be directly affected by a fire requiring operator actions discussed above, an unanticipated event such as the loss of a breaker or a blown fuse, could result in a loss of the AC-powered lighting. Such an event could result in these areas being inaccessible due to insufficient lighting. With regard to portable lighting, the staff concludes that the need to obtain portable lighting prior to entering Area AB 95-3 and to carry and use the portable lighting under the stressful and unusual conditions of a fire emergency would place special burdens on plant operators that Section III.J of Appendix R specifically intended to preclude. This proposal does not provide reasonable assurance that the licensee will have unburdensome sources of light such that it will be able to perform all actions required during an emergency, making adequate allowances for the temporary loss of AC-powered lighting due to fire related or non-fire related reasons. Therefore, this proposal does not meet the underlying purpose of the regulation.

5.0 CONCLUSION

On the basis of its review and evaluation of the information provided in the licensee's exemption request and its response to the request for additional information, the staff concludes that the licensee's request for exemption from the technical requirements of Section III.J of Appendix R to 10 CFR Part 50 in connection with areas of the auxiliary building, control complex, intermediate building and turbine building does not demonstrate that special circumstances are present. In particular, the proposed alternatives do not achieve the underlying purpose of the regulation. Therefore, the request for exemption is denied.

Principal Contributor: Edward Connell

Date: October 29, 1997