



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

July 17, 2000

Mr. John Paul Cowan
Vice President, Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Licensing (NA1B)
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15760 W. Power Line Street
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - ISSUANCE OF AMENDMENT REGARDING
EMERGENCY FEEDWATER PUMP LUBE OIL VOLUME (TAC NO. MA8483)

Dear Mr. Cowan:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 192 to Facility Operating License No. DPR-72 for Crystal River Unit 3 (CR-3). This amendment is in response to a Florida Power Corporation (FPC) request dated March 6, 2000. FPC proposed changes to the CR-3 Improved Technical Specifications (ITS) related to the diesel-driven emergency feedwater pump (EFP-3) required lube oil volume. The proposed changes were a result of reviews of lube oil consumption calculations which determined that the lube oil volumes specified in the ITS were not adequate. In addition, testing of EFP-3 determined that the lube oil consumption rate was higher than the value supplied by the pump vendor.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

L. Wiens, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosures: 1. Amendment No. 192 to DPR-72
2. Safety Evaluation

cc w/enclosures: See next page



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FLORIDA POWER CORPORATION
CITY OF ALACHUA
CITY OF BUSHNELL
CITY OF GAINESVILLE
CITY OF KISSIMMEE
CITY OF LEESBURG
CITY OF NEW SMYRNA BEACH AND UTILITIES COMMISSION,
CITY OF NEW SMYRNA BEACH
CITY OF OCALA
ORLANDO UTILITIES COMMISSION AND CITY OF ORLANDO
SEMINOLE ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-302

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 192
License No. DPR-72

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Florida Power Corporation, et al. (the licensees), dated March 6, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

- E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. DPR-72 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 192 , are hereby incorporated in the license. Florida Power Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Project Licensing Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: July 17, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 192

TO FACILITY OPERATING LICENSE NO. DPR-72

DOCKET NO. 50-302

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Page

3.7-39
3.7-40
B 3.7-90
B 3.7-92
B 3.7-94

Insert Page

3.7-39
3.7-40
B 3.7-90
B 3.7.92
B 3.7-94

3.8 PLANT SYSTEMS

3.7.19 Diesel Driven EFW (DD-EFW) Pump Fuel Oil, Lube Oil and Starting Air

LC0 3.7.19 The stored diesel fuel oil, lube oil, and starting air subsystems shall be within limits for the DD-EFW Pump.

APPLICABILITY: When the associated DD-EFW Pump is required to be OPERABLE.

-----NOTE-----
LC0 3.0.4 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DD-EFW Pump fuel oil supply tank level < 9,480 gal and > 8,335 gal in the storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. With stored DD-EFW Pump diesel lube oil inventory < 207 gal and > 178 gal.	B.1 Restore stored lube oil inventory to within limits.	48 hours
C. DD-EFW Pump with stored fuel oil total particulates not within limits.	C.1 Restore fuel oil total particulates to within limits.	7 days
D. DD-EFW Pump with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. DD-EFW Pump with starting air receiver pressure < 177 psig and > 150 psig.	E.1 Restore starting air receiver pressure to within limits.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required ACTION and associated Completion Time not met. <u>OR</u> For DD-EFW Pump fuel oil, lube oil or starting air subsystems not within limits for reasons other than Conditions A, B, C, D or E.	F.1 Declare DD-EFW Pump inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.19.1 Verify DD-EFW Pump fuel oil storage tank contains $\geq 9,480$ gal of fuel.	31 days
SR 3.7.19.2 Verify DD-EFW Pump stored lube oil inventory is ≥ 207 gal.	31 days
SR 3.7.19.3 Verify DD-EFW Pump fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of the Diesel Fuel Oil Testing program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.7.19.4 Verify DD-EFW Pump starting air receiver pressure is ≥ 177 psig.	31 days

BASES

BACKGROUND engine working surfaces and to remove excess heat generated by friction during operation. The onsite lube oil storage is sufficient to ensure 7 days of operation. This supply ensures adequate time is available to replenish lube oil from outside sources prior to the system running out of lube oil.

The DD-EFW Pump engine has an air start system with adequate capacity for six successive start attempts on the engine without recharging the air start receivers. A single DD-EFW pump engine start is assured with air receiver pressure > 150 psig.

APPLICABLE SAFETY ANALYSIS The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 6 (Ref. 4) and Chapter 14 (Ref. 5), assume Engineered Safeguard (ES) systems are OPERABLE. The DD-EFW Pump is designed to provide sufficient EFW flow capacity to ensure the availability of necessary emergency feedwater to one or two steam generators. The DD-EFW pump is part of the redundant and diverse EFW system that provide steam generator secondary side cooling water.

Since diesel fuel oil, lube oil, and the air start subsystem support the operation of the DD-EFW pump system, they satisfy Criterion 3 of the NRC Policy Statement.

LCO A sufficient quantity of stored diesel fuel oil supply is required to be available to ensure the capability to operate the DD-EFW Pump for 7 days. Diesel fuel oil is also required to meet specific quality standards. This EFW train is one of the two, full capacity and diverse sources of emergency feedwater for steam generator secondary side cooling.

A sufficient lube oil supply must be available to ensure the capability to operate the diesel engine for its 7 day fuel capacity (without refueling) rating. Engine lube oil

(continued)

BASES

ACTIONS

B.1

With stored lube oil inventory between 178 and 207 gallons, there is not sufficient lube oil to support 7 days continuous operation of the DD-EFW Pump. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. In this Condition, a period of 48 hours is considered adequate to restore the required volume prior to declaring the DD-EFW Pump inoperable. The volume of stored lube oil specified does not include the engine lube oil inventory contained in the sump. If the required stored volume cannot be restored, the DD-EFW Pump is declared inoperable.

The 48 hour Completion Time is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the actions that will be initiated to obtain replenishment, and the low probability of an event occurring during this brief period.

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion for DD-EFW Pump fuel oil particulates. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. However, poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean the fuel oil will not burn properly and given that proper engine performance has been recently demonstrated (per SR 3.7.5.2), it is prudent to allow a brief period of time prior to declaring the associated DD-EFW Pump inoperable. The 7 day Completion Time allows for further evaluation, resampling, and re-analysis of the DD-EFW Pump fuel oil.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.19.1

This SR provides verification that there is an adequate usable inventory of fuel oil in the supply tank to support operation of the DD-EFW pump for 7 days, assuming no offsite power and Appendix K decay heat removal EFW flow requirements. The 7 days is sufficient time to place the plant in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and the likelihood of any large reductions (use or leakage) of fuel oil during this period would be detected.

SR 3.7.19.2

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of operation of DD-EFW Pump assuming Appendix K decay heat removal EFW flow requirements. The 207 gallon requirement is based on DD-EFW Pump lube oil consumption test data. The stored lube oil volume does not include the lube oil contained in the sump.

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DD-EFW pump starts and run time are closely monitored by the plant staff.

SR 3.7.19.3

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine performance. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the

(continued)



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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 192 TO FACILITY OPERATING LICENSE NO. DPR-72

EMERGENCY FEEDWATER PUMP LUBE OIL VOLUME

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated March 6, 2000, the licensee, Florida Power Corporation (FPC), requested an amendment to its facility Operating License No. DPR-72, for Crystal River Unit 3 (CR-3), in accordance with Title 10, *Code of Federal Regulations* (10 CFR), Section 50.90. The licensee proposed changes to the CR-3 Improved Technical Specification (ITS) Section 3.7-19 and the associated Bases, which are related to the diesel-driven emergency feedwater pump (EFP-3) required lube oil volumes. The licensee stated that the proposed changes to the ITS resulted from a review of the lube oil consumption calculations, which determined that the lube oil volumes specified in the approved ITS were not adequate. In addition, the EFP-3 lube oil consumption rate was found to be higher than the value provided by the pump vendor.

2.0 BACKGROUND

FPC installed EFP-3 and its associated support systems during refueling outage 11R in order to enhance the emergency feedwater (EFW) system, remove loads on the emergency diesel generators, and remove EFW system cross-train dependencies during certain postulated single failures. The ITS relating to EFP-3 were approved in Amendment 182, issued on August 11, 1999. The ITS included requirements for lube oil inventory to support operation of EFP-3, which were based on vendor-supplied data. However, on-site testing identified that the actual lube oil consumption rate for the EFP-3 diesel engine was greater than the vendor-supplied value. The diesel-engine manufacturer stated to the licensee that the increased lube oil consumption is typical of new diesel engines, and that lube oil consumption should decrease as the engine accumulates more operating time. Due to the limited use of EFW, a number of years may be necessary until the necessary operating time is obtained such that lube oil usage decreases to the expected range. In addition to the increased consumption, an error was identified in the calculated volume of the EFP-3 lube oil sump and auxiliaries. CR-3 implemented administrative controls to require sufficient lube oil be maintained on-site to ensure a seven-day supply is available to support EFP-3 operation. Since several years may elapse before lube oil consumption decreases to the expected range, the licensee determined it was appropriate to revise the ITS to reflect the higher required storage volumes.

3.0 EVALUATION

3.1 Proposed ITS Changes

ITS 3.7.19, Condition B would be revised to read "With *stored* DD-EFW Pump diesel lube oil inventory < 207 gal and > 178 gal" instead of the present "With DD-EFW Pump diesel lube oil inventory < 221 gal. and > 211 gal." Similarly, ITS 3.7.19, Required Action B.1 would be changed from "Restore lube oil inventory to within limits" to "Restore *stored* lube oil inventory to within limits." Finally, Surveillance Requirement 3.7.19.2 would be changed to read "Verify that DD-EFW Pump *stored* lube oil inventory is $\geq$ 207 gal" from the present "Verify that DD-EFW Pump lube oil inventory is $\geq$ 221 gal."

The Bases for ITS 3.7.19 would also be revised to reflect these changes and to reflect that the stored lube oil does not include the lube oil contained in the diesel engine sump or auxiliaries. The revised ITS Bases would also state that the lube oil requirements are based on EFP-3 lube oil consumption test data.

The original requirement for lube oil inventory was based on the minimum amount of lube oil to run the engine plus the amount of lube oil consumed in seven days of continuous operation. The total volume of the engine sump and auxiliaries was originally determined to be large enough to contain this volume of oil. However, due to the error in the calculated total volume of the lube oil sump and auxiliaries and the increased lube oil consumption rate, the engine sump cannot hold these combined volumes. Therefore, the licensee has proposed to change the convention for referencing the required lube oil inventory from that contained in the engine sump to an amount determined to be the maximum amount of lube oil consumed during seven days of continuous operation. In addition, ITS 3.7.19 requires that EFP-3 be operable, which would require that sufficient oil be maintained in the sump for initial startup and operation. The consumed lube oil is stored separate from the engine sump, but can be added to the sump while the engine is running.

The staff agrees that it is reasonable to experience higher than normal lube oil usage in new diesel engines until the engine has accumulated a certain amount of operating time. Since the diesel engine for EFP-3 is designed to allow monitoring of lube oil level, and lube oil can be added to the engine while it is operating, it is acceptable for the necessary supply of lube oil to be stored off-engine. Since the revised requirement for stored lube oil will conservatively account for the increased lube oil consumption, the staff finds that the changes to ITS 3.7.19 will ensure the EFW system readiness to mitigate design-basis accident events and are consistent with other similar ITS requirements for similar components, and are, therefore, acceptable.

4.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from Mary E. Clark of the State of Florida, Department of Health and Rehabilitative Services, to Deborah A. Miller, Licensing Assistant, U.S. Nuclear Regulatory Commission (NRC), the State of Florida does not desire notification of issuance of license amendments.

5.0 ENVIRONMENTAL CONSIDERATIONS

The amendment changes requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding (65 FR 21036). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

Based on its review of the licensee's proposal, as described above, the staff has determined that the changes will provide reasonable assurance that a sufficient supply of lube oil will be available to support operation of the diesel driven EFW pump, and, thus, are acceptable. The staff concludes that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: L. Wiens, NRR

Date: July 17, 2000

Mr. John Paul Cowan
Florida Power Corporation

CRYSTAL RIVER UNIT NO. 3

cc:

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July 17, 2000

SUBJECT: CRYSTAL RIVER UNIT 3 - ISSUANCE OF AMENDMENT REGARDING
EMERGENCY FEEDWATER PUMP LUBE OIL VOLUME (TAC NO. MA8483)

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/RA/
L. Wiens, Senior Project Manager, Section 2
Project Directorate II
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Docket No. 50-302

Enclosures: 1. Amendment No. 192 to DPR-72
2. Safety Evaluation

cc w/enclosures: See next page

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