



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

LOUISIANA POWER AND LIGHT COMPANY

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 58  
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Louisiana Power and Light Company (the licensee) dated August 14, 1989, 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. NPF-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 58, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Frederick J. Heddon, Director  
Project Directorate IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 31, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 58

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

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 areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove

3/4 1-23  
B 3/4 1-5  
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Insert

3/4 1-23  
B 3/4 1-5  
B 3/4 1-6

## REACTIVITY CONTROL SYSTEMS

### CEA DROP TIME

#### LIMITING CONDITION FOR OPERATION

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3.1.3.4 The arithmetic average of the CEA drop times of all full-length CEAs from a fully withdrawn position, shall be less than or equal to 3.0 seconds; and the individual full length (shutdown and regulating) CEA drop time, from a fully withdrawn position, shall be less than or equal to 3.2 seconds from when the electrical power is interrupted to the CEA drive mechanism until the CEA reaches the 90% insertion position with:

- a.  $T_{avg}$  greater than or equal to 520°F, and
- b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

#### ACTION:

- a. With either the average CEA drop time or any individual CEA drop time of any full length CEA determined to exceed the above limits, restore the CEA drop time to within the above limits before proceeding to MODE 1 or 2.
- b. With the CEA drop times within limits but determined at less than full reactor coolant flow, operation may proceed provided THERMAL POWER is restricted to less than or equal to the maximum THERMAL POWER level allowable for the reactor coolant pump combination operating at the time of CEA drop time determination.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.4 The CEA drop time of full-length CEAs shall be demonstrated through measurement prior to reactor criticality:

- a. For all CEAs following each removal and reinstallation of the reactor vessel head,
- b. For specifically affected individuals CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and
- c. At each refueling outage.

## REACTIVITY CONTROL SYSTEMS

### SHUTDOWN CEA INSERTION LIMIT

#### LIMITING CONDITION FOR OPERATION

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3.1.3.5 All shutdown CEAs shall be withdrawn to greater than or equal to 145 inches.

APPLICABILITY: MODES 1 and 2\*\*#\*\*.

#### ACTION:

With a maximum of one shutdown CEA withdrawn to less than 145 inches withdrawn, within 1 hour either:

- a. Withdraw the CEA to greater than or equal to 145 inches, or
- b. Declare the CEA inoperable and determine that the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied within 1 hour and be in at least HOT STANDBY within 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.5 Each shutdown CEA shall be determined to be withdrawn to greater than or equal to 145 inches withdrawn:

- a. Within 15 minutes prior to withdrawal of any CEAs in regulating groups during an approach to reactor criticality, and
- b. At least once per 12 hours thereafter.

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\*See Special Test Exception 3.10.2.

#With  $K_{eff}$  greater than or equal to 1.0.

\*\*Except for surveillance testing pursuant to Specification 4.1.3.1.2.

## REACTIVITY CONTROL SYSTEMS

### BASES

#### MOVABLE CONTROL ASSEMBLIES (Continued)

continued operations when the positions of CEAs with inoperable position indicators can be verified by the "Full In" or "Full Out" limits.

CEA positions and OPERABILITY of the CEA position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

The arithmetic average CEA drop time restriction is consistent with the assumed CEA drop time used in the safety analyses. The maximum CEA drop time restriction limits the CEA drop time distribution about the average to that used to support the safety analyses. Measurement with  $T_{avg}$  greater than or equal to 520°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions. The CEA drop time restriction is representative of the design and operating conditions for Cycle 3 and reverification may be required for (1) any fuel management change that significantly affects the core wide axial or radial power profiles, and (2) any mechanical, flow, control, or CEA location changes that would significantly affect the CEA drop time distribution.

The establishment of LSSS and LCOs requires that the expected long and short-term behavior of the radial peaking factors be determined. The long term behavior relates to the variation of the steady-state radial peaking factors with core burnup and is affected by the amount of CEA insertion assumed, the portion of a burnup cycle over which such insertion is assumed, and the expected power level variation throughout the cycle. The short term behavior relates to transient perturbations to the steady-state radial peaks due to radial xenon redistribution. The magnitudes of such perturbations depend upon the expected use of the CEAs during anticipated power reductions and load maneuvering. Analyses are performed based on the expected mode of operation of the NSSS (base loaded, or load maneuvering) and from these analyses CEA insertions are determined and a consistent set of radial peaking factors defined. The Long Term Steady State and Short Term Insertion Limits are determined based upon the assumed mode of operation used in the analyses and provide a means of preserving the assumptions on CEA insertions used. The limits specified serve to limit the behavior of the radial peaking factors within the bounds determined from analysis. The actions specified serve to limit the extent of radial xenon redistribution effects to those accommodated in the analyses. The Long and Short Term Insertion Limits of Specification 3.1.3.6 are specified for the plant which has been designed for primarily base loaded operation but which has the ability to accommodate a limited amount of load maneuvering.

The Transient Insertion Limits of Specification 3.1.3.6 and the Shutdown CEA Insertion Limits of Specification 3.1.3.5 ensure that (1) the minimum SHUT-DOWN MARGIN is maintained, and (2) the potential effects of a CEA ejection accident are limited to acceptable levels. Long-term operation at the Transient Insertion Limits is not permitted since such operation could have effects on the core power distribution which could invalidate assumptions used to determine the behavior of the radial peaking factors. Insertion of Reg. Groups 5 and 6 is permitted to be essentially tip-to-tip within the limits imposed by the

## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

Transient Insertion Limit Line. This method of insertion is protected from sequence errors by the Core Protection Calculators.

The Part Length CEA Insertion Limits of Specification 3.1.3.7 ensure that adverse power shapes and rapid local power changes which affect radial peaking factors and DNB considerations do not occur as a result of a part-length CEA group covering the same axial segment of the fuel assemblies for an extended period of time during operation.