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Correction to Supporting SERS to Amdts 55 & 79 DPR-31

DEC 23 1982

Docket Nos. 50-250
and 50-251

Dr. Robert E. Uhrig, Vice President
Advanced Systems and Technology
Florida Power and Light Company
Post Office Box 529100
Miami, Florida 33152

Dear Dr. Uhrig:

On March 14, 1980, the Commission issued Amendment No. 55 to Facility Operating License No. DPR-31 and Amendment No. 47 to Facility Operating License No. DPR-41 for the Turkey Point Plant Unit Nos. 3 and 4, respectively. On March 8, 1982, the Commission issued Amendment No. 79 to Facility Operating License No. DPR-31 and Amendment No. 73 to Facility Operating License No. DPR-41 for the Turkey Point Plant Unit Nos. 3 and 4, respectively. The amendments consists of changes to the Technical Specifications in response to your applications transmitted by letters dated December 11, 1978 and March 10, 1981, respectively.

As the result of our review of your amendment requests, some late changes were incorporated into the final Technical Specifications. The supporting Safety Evaluations were not corrected to incorporate these changes as the result of an administrative error.

Enclosures 1 and 2 are corrected Safety Evaluations for the March 14, 1980 and March 8, 1982 amendments, respectively. We have noted the corrections with a bar in the right hand margin of each corrected Safety Evaluation.. Replace the existing Safety Evaluations with the enclosed copies which accurately reflect the staff's evaluations.

Please accept our apologies for any inconvenience these errors may have caused.

Sincerely,

ORIGINAL SIGNED

Daniel G. McDonald, Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:
As stated

cc w/enclosures:
See next page

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. DPR-31

AND AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NO. DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT NUCLEAR GENERATING, UNIT NOS. 3 AND 4

DOCKET NOS. 50-250 AND 50-251

1.0 Introduction

By application dated December 11, 1978 the Florida Power and Light Company (FPL) requested amendments to Facility Operating License Nos. DPR-31 and DPR-41 for the Turkey Point Plant Unit Nos. 3 and 4. The application proposed amendments which incorporate new limiting conditions for operation and surveillance requirements associated with the reactor vessel overpressure mitigating system (OMS).

By letter dated October 18, 1977 (Reference 1) Florida Power and Light Company (FPL) submitted to the NRC a plant specific analysis in support of the proposed overpressure mitigating system (OMS) for Turkey Point Units 3 and 4. This information supplements documentation submitted by FPL earlier (References 4-11).

We have completed our review of all information submitted by FPL in support of the proposed overpressure mitigating system and have found that the system provides adequate protection from overpressure transients and that acceptable Technical Specification changes have been proposed.

2.0 Background

Over the last few years, incidents identified as pressure transients have occurred in pressurized water reactors. This term "pressure transients," as used in this report, refers to events during which the temperature pressure limits of the reactor vessell, as shown in the facility Technical Specifications, are exceeded. All of these incidents occurred at relatively low temperature (less than 200 degrees F) where the reactor vessel material toughness (resistance to brittle failure) is reduced.

The "Technical Report on Reactor Vessel Pressure Transients" in NUREG 0138 (Reference 2) summarizes the technical considerations relevant to this matter, discusses the safety concerns and existing safety margins of operating reactors, and describes the regulatory actions taken to resolve this issue by reducing the likelihood of future pressure transient events at operating reactors. A brief discussion is presented here.

2.1 Vessel Characteristics

Reactor vessels are constructed of high quality steel made to rigid specifications, and fabricated and inspected in accordance with the time-proven rules of the ASME Boiler and Pressure Vessel Code. Steels used are particularly tough at reactor operating conditions. However, since reactor vessel steels are less tough and could possibly fail in a brittle manner if subjected to high pressures at low temperatures, power reactors have always operated with restrictions on the pressure allowed during startup and shutdown operations.

At operating temperatures, the pressure allowed by Appendix G limits is in excess of the setpoint of currenly installed pressurizer code safety valves. However, most operating PWRs did not have pressure relief devices to prevent pressure transients during cold conditions from exceeding the Appendix G limit.

2.2 Regulatory Actions

By letter dated August 11, 1976, (Reference 3) the NRC requested that FPL begin efforts to design and install plant systems to mitigate the consequences of pressure transients at low temperatures. It was also requested that operating procedures be examined and administrative changes be made to guard against initiating overpressure events. It was felt by the staff that proper administrative controls were required to assure safe operation for the period of time prior to installation of the proposed overpressure mitigating hardware.

FPL responded (References 4 and 5) with preliminary information describing interim measures to prevent these transients along with some discussion of proposed hardware. The proposed hardware change was to install a low pressure actuation setpoint on the pressurizer air operated relief valves.

FPL participated as a member of a Westinghouse user's group which was formed to support the analysis effort required to verify the adequacy of the proposed system to prevent overpressure transients. Using input data generated by the user's group, Westinghouse performed transient analyses (Reference 10) which are used as the basis for plant specific analysis.

The NRC requested additional information concerning the proposed procedural changes and the proposed hardware changes. FPL provided the required responses (References 6 and 7). Reference 1 transmitted the plant specific analysis for Turkey Point Units 3 & 4.

2.3 Design Criteria

Through this series of meetings and correspondence with PWR vendors and licensees, the staff developed a set of criteria for an acceptable overpressure mitigating system. The basic criterion is that the mitigating system will prevent reactor vessel pressures in excess of these allowed by Appendix G. Specific criteria for system performance are:

1) Operator Action: No credit can be taken for operator action for ten minutes after the operator is aware of a transient.

2) Single Failure: The system must be designed to relieve the pressure transient given a single failure in addition to the failure that initiated the pressure transient.

3) Testability: The system must be testable on a periodic basis consistent with the system's employment.

4) Seismic and IEEE 279 Criteria: Ideally, the system should meet seismic Category I and IEEE 279 criteria. The basic objective is that the system should not be vulnerable to a common failure that would both initiate a pressure transient and disable the overpressure mitigating system. Such events as loss of instrument air and loss of offsite power must be considered.

The staff also instructed the licensee to provide an alarm which monitors the position of the pressurizer relief valve isolation valves, along with the low setpoint enabling switch, to assure that the overpressure mitigating system is properly aligned for shutdown conditions.

2.4 Design Basis Events

The incidents that have occurred to date have been the result of operator errors or equipment failures. Two varieties of pressure transients can be identified: a mass input type from charging pumps, safety injection pumps, safety injection accumulators; and a heat addition type which causes thermal expansion from sources such as steam generators or decay heat.

On Westinghouse designed plants, the most common cause of the overpressure transients to date has been isolation of the letdown path. Letdown during low pressure operations is via a flowpath through the RHR system. Thus, isolation of RHR can initiate a pressure transient if a charging pump is left running. Although other transients occur with low frequency, those which result in the most rapid pressure increases were identified by the staff for analysis. The most limiting mass input transient identified by the staff is inadvertent injection by the largest safety injection pump. The most limiting thermal expansion transient is the start of a reactor coolant pump with a 50 degree F temperature difference between the water in the reactor vessel and the water in the steam generator.

Based on the historical record of overpressure transients and the imposition of more effective administrative controls, the staff believes that the limiting events identified above form an acceptable bases for analyses of the proposed overpressure mitigating system.

3.0 SYSTEM DESCRIPTION AND EVALUATION

The proposed OMS includes sensors, actuating mechanisms, alarms, and valves to prevent a reactor coolant system transient from exceeding the pressure and temperature limits included in the Turkey Point Units 3 and 4 Technical Specifications (TS).

FPL adopted the "Reference Mitigating System" developed by Westinghouse and the user's group. The licensee proposed to modify the actuation circuitry of the existing air operated pressurizer relief valves to provide a low pressure setpoint during startup and shutdown conditions. The low pressure setpoint is a constant 415 ± 15 psig.

When the reactor vessel is at low temperatures, with the low pressure setpoint selected, a pressure transient is terminated below the Appendix G limit by automatic opening of these relief valves. A manual switch is used to enable and disable the low setpoint of each relief valve. An enabling alarm which monitors system pressure, the position of the enabling switch and the upstream isolation valve is provided. The system low setpoint is enabled at a pressure of approximately 400 psig during plant heatup. We find the pressurizer relief valves with a manually enabled low pressure setpoint to be an acceptable concept for an OMS.

3.1 Air Supply

The power operated relief valves (PORVs) are spring-loaded-closed, air required to open the valves, which are supplied by a instrument air source. To assure operability of the valves upon loss of control air, a backup air supply will be provided. The backup air supply consists of a seismically mounted passive air accumualtor for each PORV. Each tank contains enough air for a minimum of ten minutes operation. Existing alarms in the control room alert the operator to loss of instrument air to the PORVs and associated accumulators. The staff finds the backup air supply to be acceptable.

3.2 Electrical Controls

The proposed overall approach to eliminating overpressure events incorporated administrative, procedural, and hardware controls with reliance upon the plant operator for the principal line of defense. Preventing administrative/procedural measures include (a) procedural precautions, (b) deenergization of essential components not required during the cold shutdown mode of operation, and (3) maintaining a nonwater-solid reactor coolant system condition whenever possible.

The basic design criteria that were applied in determining the adequacy of the electrical, instrumentation, and control aspects of the low temperature overpressure protection system are those listed in 2.3 above.

In addition to complying with these criteria, the licensee has agreed to provide a variety of alarms to alert the operator to (a) manually enable the pressure protection system during cooldown, (b) indicate the occurrence of a pressure transient, and (c) indicate closure of either power operated relief valve (PORV) isolation valve which ensures a complete pathway from the pressurizer to the pressurizer relief tank.

3.2.1 System Electrical and Control Description

The OMS design for Turkey Point, Units 3 and 4 uses pressurizer PORVs with a variable low pressure setpoint as the pressure relief mechanism (Reference 1). The variable low setpoint is energized and deenergized by two switches, one for each PORV, on the main control board. The variable low pressure setpoint is derived from reactor coolant system (RCS) wide range temperature using redundant transmitters. The reactor coolant pressure signal is obtained from redundant wide range pressure transmitters.

The setpoint is a constant 415 ±15 psig.

Various alarms are included in the OMS. On decreasing pressure, an alarm and annunciator will activate at 390±15 psig. This alarm alerts the operator to energize the OMS. The alarm will not clear unless (a) the low pressure setpoint is energized, (b) the PORV mode selector switch is in AUTO, and (c) the motor oeprated valves (MOVs) upstream of the PORVs are indicated open. This assures proper alignment of the OMS. On increasing pressure an alarm and annunciator will actuate at 400±15 psig. This alarm will inform the operator that RCS pressure is approaching the PORV low setpoint. Action can then be taken to remedy the cause of increasing pressure, or, if part of a normal heatup, to deenergize the OMS by placing the two NDTT control switches to the "Normal" position. Should pressure continue to increase to the PORV setpoint, an alarm and annunciator will inform the operator that the PORVs have received a signal to open from the OMS.

The PORVs are spring-loaded closed and require air to open. The air is presently supplied by instrument air. A redundant supply of air to the valves is included in the OMS. Redundant accumulators, one dedicated to each PORV, will be added to the present air source. Each accumulator will be sized to ensure a minimum of ten minutes operation of the OMS. Redundant check valves will be provided for each accumulator to prohibit backfeeding the instrument air system. Existing alarms in the control room will alert the operator to a loss of instrument air to the PORVs and associated accumulators.

3.2.1.1 Channel Separability

The OMS has two channels, one to control each PORV, that provide complete redundancy an are independent except for the use of common alarms and annunciators (as established by the single failure analysis reported in Reference 8) which are isolated so that a failure in the circuitry will not incapacitate either channel. Either one of the two PORVs provides the relief capacity needed to protect the vessel against a low-temperature overpressurization event; the other PORV provides redundant capacity. The OMS setpoints and RCS pressure signals are derived from redundant temperature and pressure transmitters. Each channel has its own ENABLE/DISABLE swich installed on the main control board. The installation of the OMS is in accordance with the separation criteria used in the design of the Turkey Point Plant. Each of the two channels uses an independent power supply from the transmitters to the solenoid valves controlling the air to the PROVs. As discussed in the system description, the OMS has separate backup air supplies for each PORV. These design features are in compliance with the single failure design criterion.

3.2.1.2 Isolation Valve and Setpoint Alarms

As described in Paragraph 3.2.1, various alarms are included in the OMS. Clearing of these alarms ensures proper alignment of the OMS. The alarms provided meet the OMS design criterion.

3.2.1.3 Operator Action

The OMS is designed to perform its intended function for at least ten minutes without operator action. The most restrictive condition is the continued operation of a safety injection pump with an assumed loss of instrument air. The redundant sources of air to the PORVs are sized to ensure a minimum of ten minutes of operation after the loss of instrument air, and existing alarms alert the operator to this loss. The system meets the design criterion for operator action.

3.2.1.4 IEEE 279 Criteria

The OMS meets the intent of IEEE 279, is designed against single failure, and has two channels that are electrically separate and meet the physical separation requirements used in the design of the electrical system for the Turkey Point Plant. In addition, periodic testing of the OMS prior to the need for its operation is included to enhance system reliability. The compliance of the design with the IEEE 279 design criteria is adequate.

3.2.1.5 Testability

Testability of the OMS is provided and the cooldown procedures include verification of OMS operability prior to solid-system, low-temperature operation. Testing will be accomplished by (a) closing the PORV isolation valves, (b) enabling the OMS, and (c) inputting a signal below 300°F (test done with RCS, pressure above 415 psig). In this manner, OMS circuits as well as PORV operability will be verified. In addition, the associated instrumentation will be surveilled for calibration and proper operation using the same methods followed for safety-related instrumentation. These provisions and procedures for testability are adequate.

3.2.2 Pressure Transient Reporting and Recording Requirements

The staff position on a pressure transient which causes the overpressure protection system to function, thereby indicating the occurrence of a serious pressure transient, is that it is a 30-day reportable event. In addition, pressure and temperature instrumentation are required to provide a permanent record of the pressure transient. The response times of the temperature/pressure recorders shall be compatible with a pressure transient increasing at a rate of approximately 100 psi per second. This instrumentation shall be operable whenever the OMS is enabled.

3 2.3 Disabling of Components Not Required During Cold Shutdown

Except as required for brief intervals by operating procedures or Technical Specifications, the staff position requires that essential components not required during cold shutdown that could produce an overpresssurization event be disabled or isolated from the RCS during cold shutdown, and that the controls to disable or isolate these components be incorporated in the Technical Specifications. In particular, the safety injection accumulators and the high pressure safety injection pumps are included in the components to be disabled or isolated. Valves and breakers used to disable essential equipment during cold shutdown must be tagged or locked to prevent inadvertent changes of state.

3.3. Testability

Testability is provided. FPL has stated that verification of operability is possible prior to solid system, low temperature operation by use of the remotely operated isolation valve, enable/disable switch and normal electronics surveillance methodology. Testing requirements will be incorporated in the Technical Specifications as discussed in Section 4.2 of this evaluation.

3.4 Appendix G

The Appendix G curve submitted by FPL for purposes of overpressure transient analysis is based on five effective full power years irradiation. The zero degree heatup curve is allowed since most pressure transients occur during isothermal metal conditions. The Appendix G limit at 100 degrees F according to this curve is 510 psig. The staff finds that use of this curve is acceptable as a basis for overpressure mitigating system performance.

3.5 Setpoint Analysis

The one loop version of the LOFTRAN (Reference 12 WCAP 7907) code was used to perform the mass input analyses. The four loop version was used for the heat input analysis. Both versions require some input modeling and initialization changes. LOFTRAN is currently under review by the staff and is judged to be an acceptable code for treating problems of this type.

The results of this analysis are provided in terms of PORV setpoint overshoot. The predicted maximum transient pressure is simply the sum of the overshoot magnitude and the setpoint magnitude. The PORV setpoint is adjusted so that given the setpoint overshoot, the resultant pressure is still below that allowed by Appendix G limits.

FPL presented the following Turkey Point Units 3 & 4 plant characteristics to determine the pressure reached for the design basis pressure transients:

SI Pump Flowrate @ 500 psig	82.7 lb/sec
RCS Volume	9343 ft^3
S G Heat Transfer area	44,430 ft^2
Relief Valve setpoint	415 psig

Westinghouse identified certain assumptions and input parameters as conservative with respect to the analysis. Some of these are listed here.

1) One PORV was assumed to fail.

2) The RCS was assumed to be rigid with respect to expansion.

3) Conservative heat transfer coefficients were assumed for the steam generator.

The staff agrees that these are conservative assumptions.

3.5.1 Mass Input Case

The inadvertent start of a safety injection pump with the plant in a cold shutdown condition was selected as the limiting mass input case. For this transient, a relief valve opening time of 2.0 seconds was used. FPL has verified that this time is conservative.

Westinghouse provided the licensee with a series of curves based on the LOFTRAN analysis of a generic plant design which indicates PORV setpoint overshoot for this transient as a function of system volume, relief valve opening time and relief valve setpoint. These sensitivity analyses were then applied to the Turkey Point Units 3 & 4 plant parameters to obtain a conservative estimate of the PORV setpoint overshoot. The staff finds this method of analysis to be acceptable.

Using the Westinghouse methodology, the Turkey Point Units 3 & 4 PORV setpoint overshoot was determined to be 78 psi. With a relief valve setpoint of 415 psig, a final pressure of 493 psig is reached for the worst case mass input transient. Since the five EFPY Appendix G limit at temperatures above 100 degrees F is above 510 psig, the staff concluded that the system performance was acceptable with a 415 psig low pressure relief valve setpoint.

3.5.2 Heat Input Case

Inadvertent startup of a reactor coolant pump with a primary to secondary temperature differential across the steam generator of 50 degrees F, and with the plant in a water solid condition, was selected as the limiting heat input case. For the heat input case, Westinghouse provided the licensee with a series of curves based on the LOFTRAN analysis of a generic plant design to determine the PORV setpoint overshoot as a function of RCS volume, steam generator UA and initial RCS temperature. For this transient, a relief valve opening time of three seconds was assumed.

The calculated final pressure for the heat input transient for a fixed ΔT of 50 degrees depends on the initial RCS temperature and is given here:

RCS Temperature	Maximum Pressure
100	437
140	456
180	478
250	520

In all these cases, for the given RCS temperature, the Appendix G limits are not exceeded.

The staff finds that the analyses of the limiting mass input and heat input cases show a maximum pressure transient below that allowed by Appendix G limits and is therefore acceptable.

3.6 Implementation Schedule

FPL installed the OMS in each unit in two phases. Phase one included installation of the low pressure setpoint circuitry and pressure sensitive alarms. Phase two included MOV interlocks and the backup air supply.

4.0 Administrative Controls

To supplement the hardware modifications and to limit the magnitude of postulated pressure transients to within the bounds of the analysis provided by the licensee, a defense in depth approach is adopted using procedural and administrative controls. Those specific conditions required to assure that the plant is operated within the bounds of the analysis are spelled out in the Technical Specifications.

4.1 Procedures

A number of provisions to prevent the initiation of pressure transients are contained in the Turkey Point operating procedures. An effort has been made to minimize unnecessary RCP starts while the plant is in a water solid condition. However, when a RCP start is required, procedures will require the operator to verify that 1) if RCS temperature is above 212 degrees F the steam pressure in the secondary side must be below the saturation pressure corresponding to the RCS temperature and 2) if RCS temperature is below 212 degrees F, that no significant vapor flow from the atmospheric dump valves will exist and that the recorded temperature difference between the hot leg and cold leg of each loop is less than 20 degrees F. Phase two installation will include a thermocouple for measuring steam generator shell-side temperature prior to starting a reactor coolant pump.

In addition, to preclude inadvertent safety injection the high pressure safety injection isolation valves and the safety injection accumulator valves are to be closed and de-energized by procedures below 1000 psig.

The staff finds that the procedural and administrative controls described are acceptable. However, the staff determined that certain procedural and administrative controls should be included in the Technical Specifications. These are listed in the following section. The licensee has agreed to these controls.

4.2 Technical Specifications

To assure operation of the overpressure mitigating system, the licensee has submitted for staff review, Technical Specifications to be incorporated into the license for Turkey Point Units 3 & 4. These specifications are consistent with the intent of the statements listed below. The licensee has assured that the Technical Specifications proposed are compatible with other license requirements.

1. Both PORVs must be operable whenever the RCS tempeature is less than the minimum pressurization temperature, except one PORV may be inoperable for seven days. If these conditions are not met, the primary system must be depressurized and vented to the atmosphere or to the pressurizer relief tank within eight hours.

2. Operability of the overpressure mitigation system requires that the low pressure setpoint will be selected, the upstream isolation valves open and the backup air supply charged.

3. No more than one high head SI pump injection valve may be energized at RCS temperatures below 380 degrees F, unless the vessel head is removed.

4. A reactor coolant pump may be started (or jogged) only if there is a steam bubble in the pressurizer, or the SG/RCS temperature is less than 50 degrees F.

5. The overpressure mitigating system must be tested on a periodic basis consistent with the need for its use.

6. When the plant is in a cold shutdown condition the safety injection accumulators shall be isolated from the RCS by verifying that the accumulator isolation valves are in the closed position and power to the valve operators is removed.

5.0 Summary

The adminsitrative controls and hardware changes proposed by Florida Power and Light Company provide protection for Turkey Point Units 3 and 4 from pressure transients at low temperatures by reducing the probability of initiation of a transient and by limiting the pressure of such a transient to below the limits set by Appendix G. The staff finds that the overpressure mitigating system meets the criteria established by the NRC and is acceptable as a long term solution to the problem of overpressure transients. Also, any future revisions of Appendix G limits for Turkey Point Units 3 and 4 must be considered and the overpressure mitigating system setpoint adjusted accordingly with corresponding adjustments in the license.

The electrical, instrumentation, and control aspects of the Turkey Point Units 3 and 4 OMS design are adequate on the basis that: (a) the proposed control circuitry meets IEEE Std. 279, (b) the system is redundant and meets the single failure criterion, (c) the design requires no operator action for ten minutes after the operator receives an overpressure action alarm, (d) the system is testable on a periodic basis, and (e) the proposed changes to the Technical Specifications are in agreement with the recommended changes described in 4.2 above.

We find the licensee's proposed system acceptable. Additionally, the licensee's proposed Technical Specifications are in agreement with the recommended changes described in Section 4.2 of this SER.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: March 14, 1980

REFERENCES

1. Florida Power and Light Company letter (Uhrig) to NRC (Lear) dated October 18, 1977.
2. "Staff Discussion of Fifteen Technical Issues listed in Attachment G November 3, 1976 Memorandum from Director NRR to NRR Staff." NUREG-0138, November 1976.
3. NRC letter (Lear) to FPL (Uhrig) dated August 11, 1976.
4. FPL letter (Uhrig) to NRC (Lear) dated October 15, 1976.
5. FPL letter (Uhrig) to NRC (Lear) dated December 10, 1976.
6. FPL letter (Uhrig) to NRC (Lear) dated March 1, 1977.
7. FPL letter (Uhrig) to NRC (Lear) dated March 16, 1977.
8. FPL letter (Uhrig) to NRC (Lear) dated March 31, 1977.
9. FPL letter (Uhrig) to NRC (Lear) dated April 21, 1977.
10. "Pressure Mitigating System Transient Analysis Results" prepared by Westinghouse for the Westinghouse user's group on reactor coolant system overpressurization, dated July 1977.
11. FPL letter (Uhrig) to NRC (Lear) dated January 3, 1978.
12. Loftran Code Description, WCAP-7907, October 1972.

ENCLOSURE 2

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 79 TO FACILITY OPERATING LICENSE NO. DPR-31

AND AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT PLANT UNIT NOS. 3 AND 4

DOCKET NOS. 50-250 AND 50-251

Introduction

By letter dated March 10, 1981, the Florida Power and Light Company (the licensee) requested amendments to Facility Operating License No. DPR-31 and DPR-41 for the Turkey Point Plant Unit Nos. 3 and 4. The amendments would change the Technical Specification to define the Reactor Coolant System Pressure Boundary and to provide an alternate means of increasing assurance of proper valve position. In addition, administrative errors are corrected in the Table of Contents and Table 3.5-2. Page i had certain items left out and Table 3.5-2 was incorrectly modified in Amendment Nos. 73 and 67, issued November 4, 1981. The pressure in the footnote was inadvertently changed from 2000 psig to 1800.

During our review certain modifications to the amendment request were found necessary. We discussed these modifications with the licensee. He found the modifications acceptable and they have been incorporated in these amendments.

Background

In the letter dated March 10, 1981, the licensee proposed technical specification changes for the overpressure mitigating system. This change addresses the overpressure mitigating system Technical Specification changes proposed by FPL by letter dated October 18, 1977 and included as amendments to Facility Operating Licenses DPR-31 and DPR-41 by Amendment Nos. 55 and 47, respectively, issued on March 14, 1980.

Evaluation

The proposed modifications are discussed below:

(1) T.S. 1.18
This is a definition of the reactor coolant system pressure boundary integrity. This definition is editorial in nature, adds to the clarity of the Technical Specifications, and is acceptable.

(2) T.S. 3.15
This Technical Specification is modified so that MOV-*-869 is closed and it's power removed when RCS temperature is ≤ 380°F. Power to this valve is removed in lieu of removing the power from the operators of MOV-*-866 and MOV-*-866B. MOV-*-869 is on the 3" line connecting the 4 High Head Safety Injection pumps to the RCS hot legs. This 3" line forks in two 2" lines leading to RCS loops A and B hot legs. MOV-*866 A and B valves are on the two 2" lines.

This Technical Specification modification proposes not removing the power from the 866 valves' operators, however they will remain closed, and proposes instead removing power from the 869 valve. The reason for this modification is operational convenience, since maintaining the power to the 866 valves' operators will also maintain valve position indications available in the control room for the two valves. This will enable the operator to conduct valve position surveillance without having to enter the containment. We concur with the licensee's argument and conclude that the closure and power removal to the 869 valve on one hand, and closure and control room valve position indication of the parallel valves 866 A & B on the other hand, provide adequate isolation of the hot leg injection paths to the RCS.

(3) T.S. 4.16
This is a new Technical Specification that provides the surveillance specification on the pressurizer PORV's backup air supply.

The licensee proposed to verify the operational readiness of the backup air supply daily. We find this surveillance frequency acceptable.

(4) T.S. B3.15
A typographical error has been corrected.

We note that the staff's evaluation included with above noted license amendments addressed setpoint analysis in Section 3.5 wherein it identified the relief valve setpoint as 415 psig. In Section 3.15, paragraph 3, the specification states that "at RCS temperatures of less than or equal to 275°F with RCS pressure boundary integrity established, two pressurizer power operated relief valves shall be operable at the low setpoint range." We find that this statement is vague with respect to the required setpoint and not consistent with the degree of specificity required in technical specifications. Paragraph 3 of Section 3.15 should be changed to read: "...shall be operable with a setpoint of 415 ±15 psig." These values were provided in the licensee's analysis of the system which formed the staff acceptance of the design in the SER issued on March 14, 1980.

We conclude that the proposed Technical Specification 3.15.3 is acceptable as modified with the addition of the setpoint value noted above.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: March 8, 1982

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