

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

## SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 38 TO

FACILITY OPERATING LICENSE NO. NPF-38

LOUISIANA POWER AND LIGHT COMPANY

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

#### 1.0 INTRODUCTION

By application dated January 13, 1988, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3. The proposed changes would revise Table 3.6-2, Containment Isolation Valves, by adding a new isolation valve to the automatic isolation section and moving an existing valve to the automatic from the manual section while changing its identification number. The changes also revise Table 3.6-1, Containment Leakage Paths, to add a new containment isolation valve for Type C testing and changes the identification numbers of an existing valve.

## 2.0 DISCUSSION

The Waterford 3 containment Technical Specifications require the pressure and temperature be maintained within acceptable limits or restored to within acceptable limits in one hour. Failing to restore the pressure/temperature within the time would require that the plant be shut down. The Containment Cooling System provides pressure control but sometimes the combination of atmospheric conditions and cooling capacity makes the effort of pressure control difficult. The staff is aware of these difficulties, especially for plants in southern regions, and agrees that intermittent pressure control through small lines is appropriate if accomplished within guidelines and criteria which apply to containment penetrations, isolation, and testability.

The licensee proposes a modification to the Containment Atmospheric Release System (CARS) to allow intermittent pressure control. The CARS function, capability, and Technical Specification requirements will not be impinged upon or altered. The Containment Cooling System function, capability, and Technical Specification requirements will likewise not be impinged upon or altered. The modification proposed by the licensee will crosstie the CARS system outside containment to the existing Radiation Area Building (RAB) vent system which is filtered and vented through the plant stack.

#### 3.0 EVALUATION

The CARS serves as a backup to the hydrogen recombiner system and will continue to be unaffected by the proposed modification. The line is four inches in diameter and meets the guidelines that intermittent pressure control should be through a small line, i.e., not through such a system as the containment purge supply and exhaust system which is much larger. The tie in-between the CARS and RAB Normal Ventilation System originates between the CARS outside containment isolation valve and the CARS exhaust fan. A new inside containment air-operated and fail-closed isolation valve (CAR 200B) will be added in parallel with the existing CAR 201B motor-operated valve; the outside containment isolation valve (CAR 202B) will be changed from a manual valve to an air-operated and fail-closed valve. Two constraints are 1) the containment pressure control line must be capable of isolation within 5 seconds following a containment isolation or high radiation signal (and valves must fail in the safe (closed) position), and 2) CARS train B must remain capable of performing its post-LOCA hydrogen removal function. Because air-operated valves are faster acting than motor-operated valves, the first constraint is met by adding the inside containent air-operated isolation valve, CAR 200B, and changing the outside containment isolation valve, CAR 202B, from a manual valve to an air-operator. The second constraint is met by retaining the motor-operated inside containment isolation valve, CAR 201B, so that post-LOCA credit for the instrument air system is not necessary to ensure that CARS train B can be unisolated when needed. In effect, CAR 201B is dedicated for hydrogen removal post-LOCA and CAR 200B is available for containment pressure control.

The proposed change, therefore, involves: 1) the addition of CAR 200B to Tables 3.6-1 and 3.6-2 as a new valve to automatically isolate on CIAS or high containment radiation, and 2) shifting CAR 202B from the manual isolation section of Table 3.6-2 to the automatic isolation section. Both valves must meet a five second closure criterion during testing. Because the actual valve for CAR 202B is being replaced, the valve-specific identification number used internally by Waterford 3 will also be changed from 2HV-B192B to 2HV-F229B.

For the containment isolation valves listed in Table 3.6-2, Technical Specification 3.6.3 ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment, as required by 10 CFR Part 50 Appendix A, GDC 54 through GDC 57. When controlling pressure, five second automatic isolation of the inside (CAR 200B) and outside (CAR 202B) containment isolation valves ensures that the large break LOCA analysis assumptions remain bounding. The combination of automatic isolation and the small CARS pipe diameter (4 inches) limits the total volume released from containment to well below that assumed for other analyzed releases. The proposed change to crosstie the CARS to the RAB Normal Ventilation System and the changes to the Table 3.6.2 are acceptable.

Table 3.6-1 of Technical Specification 3.6.1.2 lists the containment penetrations and valves subject to Type B and C leak rate testing. The proposed change will add a new containment isolation valve for Type C testing to the Table and change the valve identification number of an existing valve. Type C leak rate testing of the valves in question ensures that the total containment leakage volume will not exceed safety analysis assumptions at peak accident pressure. The proposed changes to Table 3.6.1 are also acceptable.

During the review of the LP&L submittal it was understood that certain design and operation requirements would be met. The licensee was requested to document these requirements and by letter dated May 6, 1988, provided this information for the record. Since this represents a documentation of how requirements are met, the information in the May 6, 1988 letter does not change or affect the results of the staff's earlier proposed determination of no significant hazards considerations. As documented by the licensee, the valves are Safety Class II, Quality Class I, and Seismic Category I, and are designed to close against LOCA loadings within 5 seconds of a receipt of a Containment Isolation Signal (CIAS) or Containment Purge Isolation Signal (high radiation levels in the plant stack and Containment Building). Valve control and position indication will be located in the Control Room on Control Panel (CP)-18.

The inside containment isolation valve will be protected from missile and jet impingement by the Quench Tank and the biological shield surrounding the Pressurizer. The inside isolation valve will point toward the containment floor, obviating the need to install screens or other devices to prevent debris from entering the isolation valve. Both isolation valves will be leak tested and environmentally qualified and become part of LP&L's Local Leak Rate Test (in accordance with Tech Spec 3.6.1.2) and E.Q. program. In discussions with the licensee, the cables and controls to the valves are also environmentally qualified.

The system will be operated on an intermittent basis to ensure containment pressure remains within the limits of Technical Specification 3.6.1.4, Internal Pressure. When containment pressure falls below a predetermined value, isolation valves will then be closed.

We have examined each of these provisions for meeting the design and operation requirements and find them acceptable.

#### 4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Nuclear Energy Division, Office of Environmental Affairs, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20.

The 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. 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 this amendment.

#### 6.0 CONCLUSION

Based upon its evaluation of the proposed changes to the Waterford 3 Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the Waterford 3 Technical Specifications.

Dated: May 25, 1988

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