Jun 5, 1996

Mr. Michael B. Sellman
Vice President Operations
Entergy Operations, Inc.
P. O. Box B
Killona, LA 70066

SUBJECT: ISSUANCE OF AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M92391)

Dear Mr. Sellman:

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 19, 1995, as supplemented by letter dated December 7, 1995.

The amendment changes the Appendix A TSs by revising the recombiner surveillance requirements to conform with the staff guidance provided in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants."

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

Sincerely,

Original signed by
Chandu P. Patel, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 119 to NPF-38
2. Safety Evaluation

cc w/encls: See next page

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

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Chandu P. Patel

Chandu P. Patel, Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 119
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated May 19, 1995, as supplemented by letter dated December 7, 1995, 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. 119, 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 to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Chandu P. Patel

Chandu P. Patel, Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: June 5, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 119

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 PAGES	INSERT PAGES
3/4 6-35	3/4 6-35
B 3/4 6-4	B 3/4 6-4
---	B 3/4 6-4a

ELECTRIC HYDROGEN RECOMBINERS - W

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE at least once per 18 months by:

a. Performing a system functional test for each hydrogen recombiner.

b. Visually examining recombiner enclosure and verifying there is no evidence of abnormal conditions.

c. Performing a resistance to ground test for each heater phase.

3/4.6.5 VACUUM RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.6.5 The primary containment to annulus vacuum relief valves shall be OPERABLE with an actuation setpoint of less than or equal to 0.307 psid (8.5 inches H_2O).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one primary containment to annulus vacuum relief valve inoperable, restore the valve to OPERABLE status within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5 No additional Surveillance Requirements other than those required by Specification 4.0.5.

3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM (Continued)

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 La leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT SPRAY SYSTEM and CONTAINMENT COOLING SYSTEM

The OPERABILITY of the Containment Spray System and the Containment Cooling System ensures that containment depressurization and cooling capability will be available in the event of a LOCA or MSLB for any double-ended break of the largest reactor coolant pipe or main steam line. Under post-accident conditions these systems will maintain the containment pressure below 44 psig and temperatures below 269.3°F during LOCA conditions or 413.5°F during MSLB conditions. The systems also reduce the containment pressure by a factor of 2 from its post-accident peak within 24 hours, resulting in lower containment leakage rates and lower offsite dose rates.

The Containment Spray System also provides a mechanism for removing iodine from the containment atmosphere under post-LOCA conditions to maintain doses in accordance with 10 CFR Part 100 limits as described in Section 6.5.2 of the FSAR.

In MODE 4 when shutdown cooling is placed in operation, the Containment Spray System is realigned in order to allow isolation of the spray headers. This is necessary to avoid a single failure of the spray header isolation valve causing Reactor Coolant System depressurization and inadvertent spraying of the containment. To allow for this realignment, the Containment Spray System may be taken out-of-service when RCS pressure is $\leq$ 400 psia. At this reduced RCS pressure and the reduced temperature associated with entry into MODE 4, the probability and consequences of a LOCA or MSLB are greatly reduced. The Containment Cooling System is required OPERABLE in MODE 4 and is available to provide depressurization and cooling capability.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves 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 and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

"Containment Isolation Valves", previously Table 3.6-2, have been incorporated into Plant Procedure UNT-005-026.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with (1) zirconium-water reactions, (2) radiolytic decomposition of water, and (3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

SURVEILLANCE REQUIREMENT SR 4.6.4.2.a requires performance of a system functional test for each hydrogen recombiner to ensure that the recombiners are operational and can attain and sustain the temperature necessary for hydrogen recombination. In particular, this SR requires verification that the minimum heater sheath temperature increases to $\geq$ 700°F in $\leq$ 90 minutes. After reaching 700°F, the power is increased to maximum for approximately 2 minutes and verified to be $\geq$ 60 kW.

SURVEILLANCE REQUIREMENT SR 4.6.4.2.b ensures that there are no physical problems that could affect recombiner operation. Since the recombiners are mechanically passive, they are not subject to mechanical failure. The only credible failures involve loss of power, blockage of the internal flow path, missile impact, etc. A visual inspection is sufficient to determine abnormal conditions that could cause such failures.

SURVEILLANCE REQUIREMENT SR 4.6.4.2.c requires performance of a resistance to ground test for each heater phase to ensure that there are no detectable grounds in any heater phase. This is accomplished by verifying that the resistance to ground for any heater phase is ≥ 10,000 ohms.

3/4.6.5 VACUUM RELIEF VALVES

The OPERABILITY of the primary containment to annulus vacuum relief valves with a setpoint of less than or equal + 0.3 psid ensures that the containment internal pressure differential does not become more negative than the containment design limit for internal pressure differential of 0.65 psi. This situation would occur, for the worst case, if all containment heat removal systems (containment spray, containment cooling, and other HVAC systems) were inadvertently started with only one vacuum relief valve OPERABLE.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 119 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated May 19, 1995, as supplemented by letter dated December 7, 1995, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Waterford Steam Electric Station, Unit 3 (Waterford 3), Technical Specifications (TSs). The requested changes would revise the recombiner surveillance requirements (SRs) to conform with the staff guidance provided in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants".

Waterford 3 is a 3390 megawatt Combustion-Engineering pressurized water reactor located 20 miles west of New Orleans, LA. It has a 2,677,000ft^3, dry, cylindrical steel primary containment enclosed by a reinforced concrete shield building. The primary containment design pressure is 44 psig. The shield building serves as a secondary containment fission product control structure.

2.0 DISCUSSION AND EVALUATION

2.1 Recombiner Safety Function

The function of hydrogen recombiners is to preclude the formation of a combustible mixture in the closed containment atmosphere during the post-accident period of a design basis accident, without having to resort to containment venting and purging through use of the Containment Atmosphere Release System (CARS). The recombiners accomplish this by recombining hydrogen and oxygen internally in a controlled manner to form water vapor. This process takes place within the primary containment thereby eliminating any discharge to the environment such as might occur if the CARS were used to reduce the containment hydrogen concentration. Recombiner operability is demonstrated by periodic surveillance testing.

2.2 Recombiner Surveillance Requirements

Current Requirements: Waterford 3 has two installed hydrogen recombiners. The current TSs require:

4.6.4.2 Each hydrogen recombiner system be demonstrated OPERABLE:

a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 kW.

b. At least once per 18 months by:

1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits,

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).

3. Verifying the integrity of the heater electrical circuits by performing a resistance to ground test following the above functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

Proposed Changes: The licensee proposes to replace the above with the following:

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE at least once per 18 months by:

a. Performing a system functional test for each hydrogen recombiner.

b. Visually examining recombiner enclosure and verifying there is no evidence of abnormal conditions.

c. Performing a resistance to ground test for each heater phase.

The amendment would combine the 6-month functional test and 18-month functional test into a single 18-month functional test and remove specific test method and acceptance criteria from the SR statement. The relocated criteria would be stated in the Bases.

The licensee's basis for the proposed changes is consistency with the staff guidance provided in the Improved Standard Technical Specifications (ISTS).

The proposed TSs are consistent with the ISTS guidance which represents the staff position and standard practice applicable to surveillance testing of thermal recombiners for large, dry containments having a backup vent/purge capability. The staff has previously determined that surveillance testing during each refueling outage is an appropriate test interval for thermal recombiners (see also: NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements"). The use of the Bases to specify certain specific test methods and acceptance criteria is also consistent with staff guidance. A TS amendment to bring the Waterford 3 recombiner surveillance requirements into consistency with the guidance of the ISTS is appropriate since the Waterford 3 hydrogen control systems conform to standard practice (i.e., redundant thermal recombiners with a backup vent/purge capability). The proposed changes to the SRs are therefore acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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 the amendment involves no significant hazards consideration and there has been no public comment on such finding (61 FR 180). 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.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, 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: W. Long

Date: June 5, 1996