

March 15, 1995

Entergy Operations,
River Bend Station
ATTN: Mr. John R. McGaha, Jr.
Vice President - Operations
Post Office Box 220
St. Francisville, Louisiana 70775

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO.77 TO FACILITY
OPERATING LICENSE NO. NPF-47 (TAC NO. M89149)

Dear Mr. McGaha:

The Commission has issued the enclosed Amendment No.77 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 15, 1994 (RBG-40366).

The proposed amendment deletes TS 3/4.3.8, "Turbine Overspeed Protection System." The relocation of the turbine overspeed testing requirements to the Technical Requirements Manual is a line item improvement of the TSs.

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

Sincerely,

Original signed by:

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures: 1. Amendment No.77 to NPF-47
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

Docket File	PUBLIC	PD4-1 R/F	DWigginton
OPA(2G5)	OC/LFDCB	JRoe	PNoonan
OGC (15B18)	CGrimes (11E22)	GHill (2)	EBaker
ABeach, RIV	ACRS (4)	WBeckner	

Document Name: RB89149.AMD *See previous concurrence

OFC	LA:PD4-1	PM:PD4-11	DRPW	SPLB*	OGC
NAME	PNoonan	DWigginton:mk	WReckley	CMcCracken	C.MARCO
DATE	2/27/95	3/11/95	3/1/95	1/23/95	3/1/95
COPY	(YES/NO)	(YES/NO)	(YES/NO)	YES/NO	YES/NO

OFFICIAL RECORD COPY

200023

NRC FILE CENTER COPY

9503200368 950315
PDR ADDCK 05000458
P PDR

DF01
cf



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

March 15, 1995

Entergy Operations, Inc.
River Bend Station
ATTN: Mr. John R. McGaha, Jr.
Vice President - Operations
Post Office Box 220
St. Francisville, Louisiana 70775

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO.77 TO FACILITY
OPERATING LICENSE NO. NPF-47 (TAC NO. M89149)

Dear Mr. McGaha:

The Commission has issued the enclosed Amendment No. 77 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 15, 1994 (RBG-40366).

The proposed amendment deletes TS 3/4.3.8, "Turbine Overspeed Protection System." The relocation of the turbine overspeed testing requirements to the Technical Requirements Manual is a line item improvement of the TSs.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "D. Wigginton".

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures: 1. Amendment No. 77 to NPF-47
2. Safety Evaluation

cc w/encls: See next page

Mr. John R. McGaha
Entergy Operations, Inc.

River Bend Station

cc:

Winston & Strawn
ATTN: Mark J. Wetterhahn, Esq.
1400 L Street, N.W.
Washington, D.C. 20005-3502

Mr. Harold W. Keiser
Executive Vice President and
Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286

Mr. Otto P. Bulich
Manager - Nuclear Licensing
Entergy Operations, Inc.
River Bend Station
St. Francisville, Louisiana 70775

Mr. Michael B. Sellman
General Manager - Plant Operations
Entergy Operations, Inc.
River Bend Station
Post Office Box 220
St. Francisville, Louisiana 70775

Mr. Philip G. Harris
Cajun Electric Power Coop, Inc.
10719 Airline Highway
P. O. Box 15540
Baton Rouge, Louisiana 70895

Mr. James J. Fisticaro
Director - Nuclear Safety
Entergy Operations, Inc.
River Bend Station
Post Office Box 220
St. Francisville, Louisiana 70775

Senior Resident Inspector
P. O. Box 1051
St. Francisville, Louisiana 70775

President of West Feliciana
Police Jury
P. O. Box 1921
St. Francisville, Louisiana 70775

Mr. Jerrold G. Dewease
Vice President - Operations Support
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286-1995

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

The Honorable Richard P. Ieyoub
Attorney General
State of Louisiana
P. O. Box 94095
Baton Rouge, Louisiana 70804-9095

William G. Davis, Esq.
Department of Justice
Attorney General's Office
P. O. Box 94095
Baton Rouge, Louisiana 70804-9095

Wise, Carter, Child & Caraway
Attn: Robert B. McGehee, Esq.
P. O. Box 651
Jackson, Mississippi 39205

Ms. H. Anne Plettinger
3456 Villa Rose Drive
Baton Rouge, Louisiana 70806

Administrator
Louisiana Radiation Protection Division
P. O. Box 82135
Baton Rouge, Louisiana 70884-2135



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

GULF STATES UTILITIES COMPANY**
CAJUN ELECTRIC POWER COOPERATIVE AND
ENTERGY OPERATIONS, INC.
DOCKET NO. 50-458
RIVER BEND STATION, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 77
License No. NPF-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Gulf States Utilities* (the licensee) dated March 15, 1994, 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, as amended, 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 license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

* EOI is authorized to act as agent for Gulf States Utilities Company, which has been authorized to act as agent for Cajun Electric Power Cooperative, and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

**Gulf States Utilities Company, which owns a 70 percent undivided interest in River Bend, has merged with a wholly owned subsidiary of Entergy Corporation. Gulf States Utilities Company was the surviving company in the merger.

9503200370 950315
PDR ADOCK 05000458
P PDR

- 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-47 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. 77 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



David L. Wigginton, Senior 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: March 15, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 77

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE

V
3/4 3-106
B 3/4 3-13

INSERT

V
3/4 3-106
B 3/4 3-13

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.3 INSTRUMENTATION</u>	
3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION	3/4 3-1
3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION	3/4 3-10
3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION	3/4 3-30
3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION	
ATWS Recirculation Pump Trip System Instrumentation . . .	3/4 3-44
End-of-Cycle Recirculation Pump Trip System Instrumentation	3/4 3-48
3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION	3/4 3-54
3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION	3/4 3-59
3/4.3.7 MONITORING INSTRUMENTATION	
Radiation Monitoring Instrumentation	3/4 3-65
Seismic Monitoring Instrumentation	3/4 3-70
Meteorological Monitoring Instrumentation	3/4 3-73
Remote Shutdown Monitoring Instrumentation and Controls	3/4 3-76
Accident Monitoring Instrumentation	3/4 3-81
Source Range Monitors	3/4 3-85
Traversing In-Core Probe System	3/4 3-86
Fire Detection Instrumentation	3/4 3-87
Loose-Part Detection System	3/4 3-93
Radioactive Liquid Effluent Monitoring Instrumentation	3/4 3-94
Radioactive Gaseous Effluent Monitoring Instrumentation	3/4 3-99
3/4.3.8 DELETED	3/4 3-106

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION.....	3/4 3-107
<u>3/4.4 REACTOR COOLANT SYSTEM</u>	
3/4.4.1 RECIRCULATION SYSTEM	
Recirculation Loops.....	3/4 4-1
Jet Pumps.....	3/4 4-4
Recirculation Loop Flow.....	3/4 4-5
Idle Recirculation Loop Startup.....	3/4 4-6
3/4.4.2 SAFETY VALVES	
Safety/Relief Valves.....	3/4 4-7
Safety/Relief Valves Low-Low Set Function.....	3/4 4-9
3/4 4.3 REACTOR COOLANT SYSTEM LEAKAGE	
Leakage Detection Systems.....	3/4 4-10
Operational Leakage.....	3/4 4-11
3/4.4.4 CHEMISTRY.....	3/4 4-14
3/4.4.5 SPECIFIC ACTIVITY.....	3/4 4-18
3/4.4.6 PRESSURE/TEMPERATURE LIMITS	
Reactor Coolant System.....	3/4 4-21
Reactor Steam Dome.....	3/4 4-25
3/4.4.7 MAIN STEAM LINE ISOLATION VALVES.....	3/4 4-26
3/4.4.8 STRUCTURAL INTEGRITY.....	3/4 4-27
3/4.4.9 RESIDUAL HEAT REMOVAL	
Hot Shutdown.....	3/4 4-28
Cold Shutdown.....	3/4 4-29
<u>3/4.5 EMERGENCY CORE COOLING SYSTEMS</u>	
3/4.5.1 ECCS - OPERATING.....	3/4 5-1
3/4.5.2 ECCS - SHUTDOWN.....	3/4 5-6
3/4.5.3 SUPPRESSION POOL.....	3/4 5-8

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION.....	3/4 3-107
<u>3/4.4 REACTOR COOLANT SYSTEM</u>	
3/4.4.1 RECIRCULATION SYSTEM	
Recirculation Loops.....	3/4 4-1
Jet Pumps.....	3/4 4-4
Recirculation Loop Flow.....	3/4 4-5
Idle Recirculation Loop Startup.....	3/4 4-6
3/4.4.2 SAFETY VALVES	
Safety/Relief Valves.....	3/4 4-7
Safety/Relief Valves Low-Low Set Function.....	3/4 4-9
3/4 4.3 REACTOR COOLANT SYSTEM LEAKAGE	
Leakage Detection Systems.....	3/4 4-10
Operational Leakage.....	3/4 4-11
3/4.4.4 CHEMISTRY.....	3/4 4-14
3/4.4.5 SPECIFIC ACTIVITY.....	3/4 4-18
3/4.4.6 PRESSURE/TEMPERATURE LIMITS	
Reactor Coolant System.....	3/4 4-21
Reactor Steam Dome.....	3/4 4-25
3/4.4.7 MAIN STEAM LINE ISOLATION VALVES.....	3/4 4-26
3/4.4.8 STRUCTURAL INTEGRITY.....	3/4 4-27
3/4.4.9 RESIDUAL HEAT REMOVAL	
Hot Shutdown.....	3/4 4-28
Cold Shutdown.....	3/4 4-29
<u>3/4.5 EMERGENCY CORE COOLING SYSTEMS</u>	
3/4.5.1 ECCS - OPERATING.....	3/4 5-1
3/4.5.2 ECCS - SHUTDOWN.....	3/4 5-6
3/4.5.3 SUPPRESSION POOL.....	3/4 5-8

TABLE 4.3.7.11-1 (Continued)

TABLE NOTATIONS

- * At all times.
- ** During main condenser offgas treatment system operation.
- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
 - a. Instrument indicates measured levels above the alarm setpoint.
 - b. Circuit failure.
 - c. Instrument indicates a downscale failure.
 - d. Instrument controls not set in operate mode.
- (2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate with NBS in measurement assurance activities. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
- (3) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
 - a. One volume percent hydrogen, balance nitrogen, and
 - b. Four volume percent hydrogen, balance nitrogen.
- (4) The surveillance requirements apply to all ranges of the monitoring equipment.

INSTRUMENTATION

3/4.3.8 DELETED

INSTRUMENTATION

3/4.3.8 DELETED

INSTRUMENTATION

BASES

3/4.3.7.11 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION (Continued)

10 CFR Part 50. In addition, the radioactive release paths of the Fuel Building Ventilation Exhaust, Main Plant Exhaust Duct, and the Radwaste Building Ventilation Exhaust include post-accident monitors.

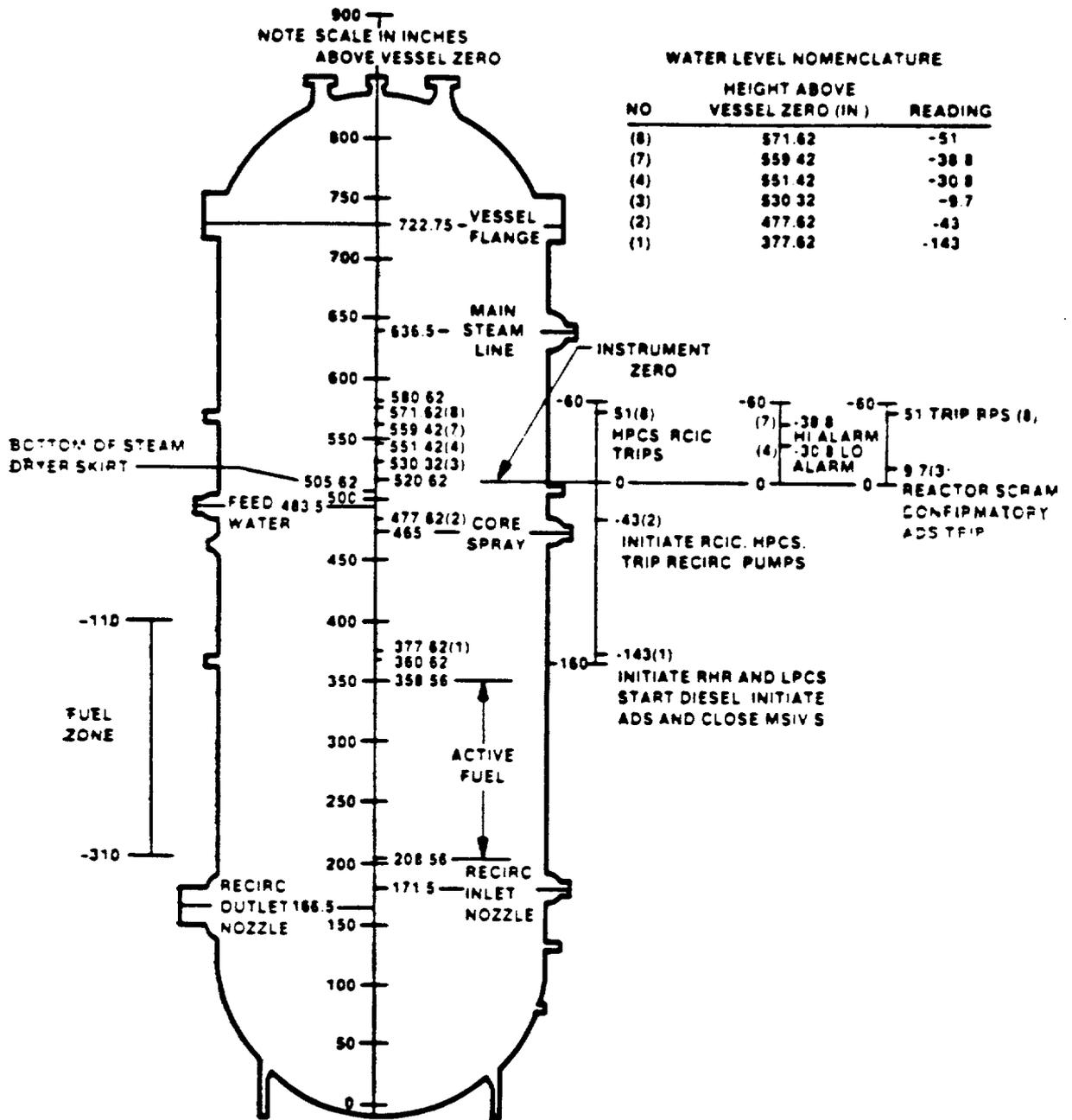
3/4.3.8 DELETED

3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION

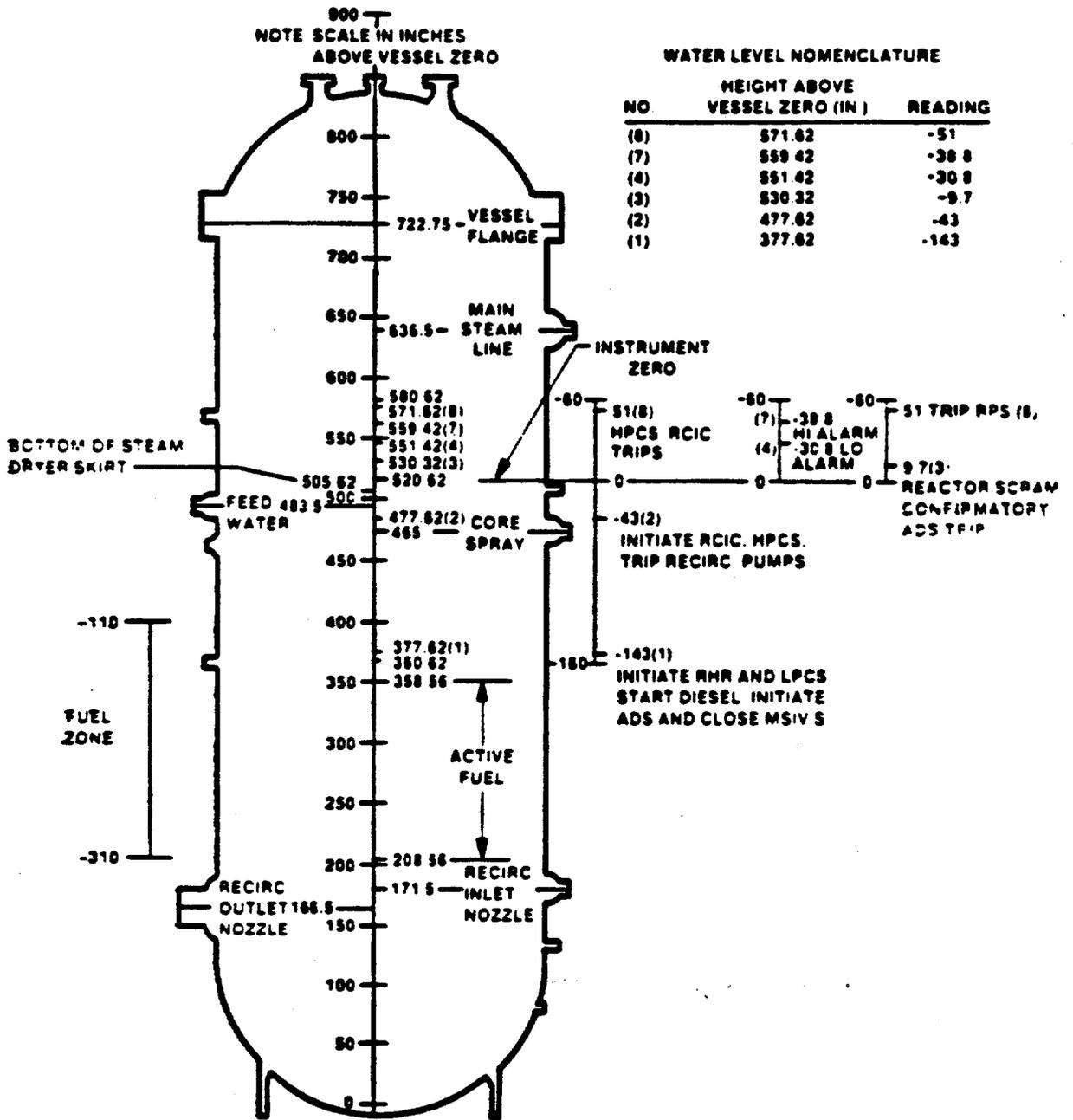
The plant systems actuation instrumentation is provided to initiate action of the containment ventilation system and the feedwater system/main turbine trip system. The containment ventilation system provides emergency containment heat removal as described in Bases 3/4.6.3. The feedwater system/main turbine trip system is initiated in the event of failure of the feedwater controller under maximum demand.

With the number of OPERABLE channels one less than required, but with Plant Systems Actuation trip capability maintained (refer to Action 150.a), the Plant Systems Actuation Instrument Trip System is capable of performing the intended function. However, the reliability and redundancy of the Plant Systems Actuation instrumentation is reduced such that a single failure in the remaining trip system could result in the inability of the Plant Systems Actuation System to perform the intended function. Therefore, only a limited time is allowed to restore compliance with the LCO. Based on GENE-770-06-1-A*, the diversity of sensors available to provide trip signals, the low probability of extensive numbers of inoperabilities affecting all diverse functions, and the low probability of an event requiring the initiation of a Plant Systems Actuation, 24 hours is allowed to restore the inoperable channels to OPERABLE status before declaring the associated trip system inoperable. Alternately, the inoperable channels may be placed in the tripped condition since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue.

*GENE-770-06-1-A - "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", December 1992.



Bases Figure B 3/4.3-1
REACTOR VESSEL WATER LEVEL



**Bases Figure B 3/4.3-1
REACTOR VESSEL WATER LEVEL**



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. NPF-47

ENERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By application dated March 15, 1994, Entergy Operations, Inc. (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-47) for the River Bend Station, Unit 1 (RBS). The proposed changes would delete Technical Specification (TS) 3/4.3.8, "Turbine Overspeed Protection System." Surveillance test requirements for the turbine overspeed protection system based on the manufacture's recommendations would be contained in the RBS technical requirements manual (TRM).

Section 182a of the Atomic Energy Act (the "Act") requires that applicants for nuclear power plant operation licenses state TSs and that these TSs be included as a part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. That regulation requires that the TSs include items in five specific categories, including (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. It states also that the Commission may include such additional TSs as it finds to be appropriate. However, the regulation does not specify the particular TSs to be included in a plant's license.

The Commission has provided guidance for the contents of TSs in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" ("Final Policy Statement"), 58 FR 39132 (July 22, 1993), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TSs to licensee-controlled documents, consistent with the standard enunciated in Portland General Electric Co. (Trojan Nuclear Plant, ALAB-531, 9 NRC 263, 273 (1979)). In that case, the Atomic Safety and Licensing Appeal Board indicated that "technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety."

Consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether a particular matter is required to be included in the TSs, as follows: (1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operation restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.¹ As a result, existing limiting condition for operation (LCO) requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TSs, while those LCO requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

2.0 EVALUATION

The RBS turbine is equipped with several valves which control turbine speed during normal plant operations and protect it from overspeed during abnormal conditions. These valves are the high pressure turbine control valves, the high pressure turbine stop valves, the low pressure turbine intermediate stop valves, and the low pressure turbine intercept valves. The turbine overspeed protection system consists of separate mechanical and electrical sensing mechanisms which are capable of initiating fast closure of the steam valves. The mechanical and electrical overspeed control systems, trip criteria, and the valve operation and closure times are described in Section 10.2.2 of the RBS Updated Safety Analysis Report (USAR).

TS 3/4.3.8 requires at least one Turbine Overspeed Protection System to be OPERABLE in OPERATIONAL CONDITIONS 1 and 2 and provides surveillance requirements for periodic testing and inspection of the turbine steam valves. The surveillance requirements include weekly cycling of each of the valves through at least one complete cycle. Cycling of the valves introduces the potential for causing plant transients which can be detrimental to plant safety.

¹ The Commission recently promulgated a proposed change to 10 CFR 50.36, pursuant to which the rule would be amended to codify and incorporate these criteria (59 FR 48180, September 20, 1994). The Commission's Final Policy Statement specified that the Reactor Core Isolation Cooling, Isolation Condenser, Residual Heat Removal, Standby Liquid Control, and Recirculation Pump Trip are included in the TSs under Criterion 4 (58 FR 39132, July 22, 1993).

In its submittal of March 15, 1994, the licensee proposed that TS 3/4.3.8 and its associated Bases be deleted. The proposed change would also relocate the surveillance requirements to the RBS TRM. The relocated surveillance requirements would be based on the manufacturer's recommendations and operational experience. Surveillance testing in accordance with the manufacturer's recommendations will permit RBS to optimize testing and inspection frequencies such that unnecessary testing and inspections will be reduced. Reduction of unnecessary testing and inspections will assist in reducing plant transients and may thereby enhance safety.

To date, the maintenance and test histories of the turbine steam valves have been good. The problems experienced with these valves to date have been minor and of a nature expected with valves in this type of service. There have been no failures of a kind which would have affected its capacity to operate or its ability to prevent an overspeed condition.

The purpose of overspeed protection is to minimize the possible generation of turbine fragment missiles. The licensee has proposed the deletion of the turbine overspeed protection system specification based on the low probability of the generation of a damaging turbine missile and other existing performance verifications performed on the overspeed protection system.

A favorable turbine orientation exists at RBS. The center of the reactor building is on a line extended through the longest axis of the turbine generator; this orientation minimizes the possible impact of a turbine fragment on safety-related equipment. Section 3.5.1.3 of the River Bend USAR provides an analysis of the probability of turbine missile damage to safety-related components. This analysis considered turbine placement and orientation and the potential generation of low-trajectory and high-trajectory missiles. The probability of turbine missile damage was based on the probabilities of missile generation, of a missile striking a critical plant region, and of a missile strike damaging its target in a manner leading to unacceptable consequences. The probability of damage to safety-related equipment based on General Electric (GE) turbine failure data was calculated to be 1.05×10^{-8} per year and, based on NUREG-0800 (Standard Review Plan) failure data, was calculated to 7.5×10^{-7} per year.

The probability results based on the turbine manufacturer's data is less than the NRC acceptable risk rate of less than 10^{-7} per year for the loss of an essential system from a single unit. The probability results based on the NRC's data slightly exceeds the acceptable risk rate. However, the NUREG-0800, Section 2.2.3, provides for an acceptable risk rate of approximately 10^{-6} per year provided that, when combined with reasonable qualitative arguments, the realistic probability can be shown to be lower. A discussion of these arguments and the conservatism of the NRC's data is provided in USAR Section 3.5.1.3.4.4. A summary of these arguments is as follows:

- a. The overall risk estimate included low-trajectory missiles as well as high-trajectory missiles and included missiles from design overspeed failures as well as destructive overspeed failures.

- b. The turbine failure rate of 10^{-4} per turbine year used in the NRC model was derived from observed turbine failures prior to 1956. Since that time, with improvements in turbine design, preservice and inservice inspections, quality control, and the use of materials of higher fracture toughness, the turbine failure rate is expected to be significantly less than the 10^{-4} per turbine year value suggested by the NRC.
- c. The entire front surfaces and roof areas of all buildings containing the essential systems, rather than the actual areas occupied by the essential systems, were used in the NRC model.
- d. The NRC model assumed every missile penetrated the concrete wall or roof, strikes an essential system and results in unacceptable damage.

Therefore, the realistic probability of turbine missile damage is acceptably low. The transient due to the actuation of the turbine stop valves (in response to a turbine overspeed event) should also be considered. For this event, the closure of the turbine stop valves initiates the design basis transient (in this case load rejection) and not the turbine overspeed itself. The overspeed protection system does not perform a subsequent function to mitigate the effects of the transient.

The NRC staff also notes that the proposed deletion of TS 3/4.3.8 would make the RBS TSs consistent with the guidance provided in the NRC's Standard Technical Specifications, General Electric Plants, BWR/6 (NUREG-1434) in that the NRC's Standard Technical Specifications do not include TSs requiring the operability of a turbine overspeed protection system.

The licensee has proposed changes to TS 3/4.3.8 to remove the requirements related to the operability of the turbine overspeed controls, and related surveillance requirements. In the amendment application, the licensee committed to include the surveillance program into a licensee controlled document; the RBS TRM. The TRM was established for the purpose of relocating TS requirements which are identified through various line item improvements. As proposed in a letter dated January 14, 1994, for LAR 91-11 (RBG-39894), the information being relocated to the TRM is controlled and subsequent changes will be reviewed in accordance with the change control program described in Specification 6.5.2.

The turbine is equipped with control valves and stop valves which control turbine speed during normal plant operation and protect it from overspeed during abnormal conditions. The turbine overspeed protection system consists of separate mechanical and electrical sensing mechanisms which are capable of initiating fast closure of the steam valves. Currently, TS 3/4.3.8 requires particular operability and surveillance requirements for these steam control and stop valves to minimize the potential for fragment missiles that might be generated as the result of a turbine overspeed event. The licensee has proposed to relocate these provisions to the TRM such that future changes to

the operation and surveillance of the turbine overspeed features can be reviewed in accordance with the change control program described in Specification 6.5.2.

Although the design basis accidents and transients include a variety of system failures and conditions which might result from turbine missiles striking various plant systems and equipment, system failures and plant conditions could be caused by other events as well as turbine failures. In view of the low likelihood of turbine missiles this scenario does not constitute a part of the primary success path to prevent or mitigate such design basis accidents and transients. Similarly, the turbine overspeed control is not part of an initial condition of a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Probabilistic safety assessments (PRA) and operating experience have demonstrated that proper maintenance of the turbine overspeed control valves is important to minimize the potential for overspeed events and turbine damage; however, that experience has also demonstrated that there is low likelihood of significant risk to public health and safety because of turbine overspeed events. Further, the potential for and consequences of turbine overspeed events are diminished by the favorable orientation of the turbine, relative to the likely path of any turbine missiles, and the licensee's inservice inspection program, which must comply with 10 CFR 50.55(a), and a surveillance program for the turbine control and stop valves derived from the manufacturers recommendations.

Accordingly, the staff concluded that the requirements for turbine overspeed controls do not meet the TS criteria in the Final Policy Statement. The limiting conditions for operation and surveillance requirements for turbine overspeed controls were removed from the standard TSs.

On this basis, the staff concludes that these requirements are not required to be in the TSs under 10 CFR 50.36 or Section 182a of the Atomic Energy Act, and are not required in order to provide adequate protection to the health and safety of the public. Further, they do not fall within any of the four criteria set forth in the Commission's Final Policy Statement, discussed above. In addition, the NRC staff finds that sufficient regulatory controls exist under the provisions of Section 6.5.2 of the facility operating license to ensure that future changes to these requirements are acceptable. Accordingly, the staff has concluded that these requirements may be relocated from the TSs to the TRM.

The NRC staff has no objection to the deletion of the Bases associated with TS 3/3.3.8. This change is administrative in nature and supports the proposed changes.

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 effluent 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 (59 FR 27056). 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: Edward Baker, NRR
David L. Wigginton, NRR

Date: March 15, 1995