

3/7/89

Docket No. 50-458

Gulf States Utilities  
ATTN: Mr. James C. Deddens  
Senior Vice President (RBNG)  
Post Office Box 220  
St. Francisville, LA 70775

Dear Mr. Deddens:

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 35 TO FACILITY  
OPERATING LICENSE NO. NPF-47 (TAC NO. 69517)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 35 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 September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989.

The amendment revises the Technical Specifications to (1) allow performance of a limited number of Type C leak rate tests of liquid filled lines during refueling activities; and (2) increase the decay time required for the irradiated fuel before the vent and drain line pathways can be opened for the purpose of performing the local leak rate tests.

A copy of the related Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

15/  
Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 35 to License No. NPF-47
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:  
See next page

DISTRIBUTION:

~~Docket File~~  
Local PDR  
PNoonan (3)  
JCalvo  
CAbbate  
JPartlow  
Wanda Jones  
ACRS (10)  
ARM/LFMB  
EJordan

NRC PDR  
PD4 Reading  
WPaulson (2)  
OGC-Rockville  
Plant File

TMeek (4)  
EButcher  
GPA/PA  
DHagan

DOCUMENT NAME: RB AMEND TAC 69517

PD4/LA *OM* PD4/PE *CHA* PD4/PM *for*  
PNoonan CAbbate:sr WPaulson  
02/27/89 02/27/89 02/27/89

OGC-Rockville  
02/27/89

PD4/D *ME*  
JCalvo  
02/03/89  
03

8903140162 890303  
PDR ADDOCK 05000458  
PDC

*DFD*  
*11*  
*ADH*  
*No legal objection subject*  
*to changes and correction of TS change pages.*  
*Indicated to SE*  
*OGC 3/1/89*

Docket No. 50-458

Gulf States Utilities  
ATTN: Mr. James C. Deddens  
Senior Vice President (RBNG)  
Post Office Box 220  
St. Francisville, LA 70775

Dear Mr. Deddens:

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 35 TO FACILITY  
OPERATING LICENSE NO. NPF-47 (TAC NO. 69517)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 35 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 September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989.

The amendment revises the Technical Specifications to (1) allow performance of a limited number of Type C leak rate tests of liquid filled lines during refueling activities; and (2) increase the decay time required for the irradiated fuel before the vent and drain line pathways can be opened for the purpose of performing the local leak rate tests.

A copy of the related Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

<sup>15/</sup>  
Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 35 to License No. NPF-47
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:  
See next page

DISTRIBUTION:

Docket File	JPartlow
Local PDR	Wanda Jones
PNoonan (3)	ACRS (10)
JCalvo	ARM/LFMB
CAbbate	EJordan

NRC PDR  
PD4 Reading  
WPaulson (2)  
OGC-Rockville  
Plant File

TMeek (4)  
EButcher  
GPA/PA  
DHagan

DOCUMENT NAME: RB AMEND TAC 69517

PD4/LA *OM*  
PNoonan  
02/27/89

PD4/PE *MA*  
CAbbate: sr  
02/27/89

*CHA*  
PD4/PM *sr*  
WPaulson  
02/27/89

OGC-Rockville  
02/27/89

PD4/D *MK*  
JCalvo  
02/03/89  
03

*No legal objection subject  
to changes and correction of  
TS change pages.  
OGC 3/1/89*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555  
March 3, 1989

Docket No. 50-458

Gulf States Utilities  
ATTN: Mr. James C. Deddens  
Senior Vice President (RBNG)  
Post Office Box 220  
St. Francisville, LA 70775

Dear Mr. Deddens:

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 35 TO FACILITY  
OPERATING LICENSE NO. NPF-47 (TAC NO. 69517)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 35 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 September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989.

The amendment revises the Technical Specifications to (1) allow performance of a limited number of Type C leak rate tests of liquid filled lines during refueling activities; and (2) increase the decay time required for the irradiated fuel before the vent and drain line pathways can be opened for the purpose of performing the local leak rate tests.

A copy of the related Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

A handwritten signature in cursive script, reading "Walter A. Paulson".

Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 35 to  
License No. NPF-47
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:  
See next page

Mr. James C. Deddens  
Gulf States Utilities Company

River Bend Nuclear Plant

cc:

Troy B. Conner, Jr., Esq.  
Conner and Wetterhahn  
1747 Pennsylvania Avenue, NW  
Washington, D.C. 20006

Mr. J. E. Booker  
Manager-River Bend Oversight  
P. O. Box 2951  
Beaumont, TX 77704

Mr. Les England  
Director - Nuclear Licensing  
Gulf States Utilities Company  
P. O. Box 220  
St. Francisville, LA 70775

Mr. William H. Spell, Administrator  
Nuclear Energy Division  
Office of Environmental Affairs  
P. O. Box 14690  
Baton Rouge, Louisiana 70898

Richard M. Troy, Jr., Esq.  
Assistant Attorney General in Charge  
State of Louisiana Department of Justice  
234 Loyola Avenue  
New Orleans, Louisiana 70112

Mr. J. David McNeill, III  
William G. Davis, Esq.  
Department of Justice  
Attorney General's Office  
7434 Perkins Road  
Baton Rouge, Louisiana 70808

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

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

Gretchen R. Rothschild-Reinike  
Louisianians for Safe Energy, Inc.  
2108 Broadway Street  
New Orleans, Louisiana 70118-5462

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

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Office of Executive Director  
for Operations  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Mr. Frank J. Uddo  
Uddo & Porter  
6305 Elysian Fields Avenue  
Suite 400  
New Orleans, Louisiana 70122

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



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

GULF STATES UTILITIES COMPANY

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 35  
License No. NPF-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Gulf States Utilities Company (the licensee) dated September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, 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
  - 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.

8903140170 890303  
PDR ADOCK 05000458  
P PDC

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. 35 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. GSU 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

*Jose A. Calvo*

Jose A. Calvo, Director  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 3, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 35

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change. Overleaf page provided to maintain document completeness.

REMOVE PAGES

1-6  
3/4 6-2  
3/4 9-6  
B 3/4 6-1

INSERT PAGES

1-6  
3/4 6-2  
3/4 9-6  
B 3/4 6-1

## DEFINITIONS

---

of a logic circuit, from sensor through and including the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by any series of sequential, overlapping or total system steps such that the entire logic system is tested.

### MEMBER(S) OF THE PUBLIC

1.24 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

### MINIMUM CRITICAL POWER RATIO

1.25 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be the smallest CPR which exists in the core.

### OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.26 The OFFSITE DOSE CALCULATION MANUAL shall contain the methodology and parameters used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints. It shall also contain a table and figure defining current radiological environmental monitoring sample locations.

### OPERABLE - OPERABILITY

1.27 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

### OPERATIONAL CONDITION - CONDITION

1.28 An OPERATIONAL CONDITION, i.e., CONDITION, shall be any one inclusive combination of mode switch position and average reactor coolant temperature as specified in Table 1.2.

### PHYSICS TESTS

1.29 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.



## DEFINITIONS

---

### PRESSURE BOUNDARY LEAKAGE

1.30 PRESSURE BOUNDARY LEAKAGE shall be leakage through a non-isolable fault in a reactor coolant system component body, pipe wall or vessel wall.

### PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING

1.31 PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING shall exist when:

- a. All containment penetrations required to be closed during accident conditions are closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position. Up to twelve vent and drain line pathways may be opened under administrative control for the purposes of surveillance testing provided the total calculated flow rate through the open vent and drain line pathways is less than or equal to 70.2 cfm.
- b. All containment hatches are closed.
- c. Each containment air lock is in compliance with the requirements of Specification 3.6.1.4.

### PRIMARY CONTAINMENT INTEGRITY - OPERATING

1.32 PRIMARY CONTAINMENT INTEGRITY - OPERATING shall exist when:

- a. All containment penetrations required to be closed during accident conditions are either:
  1. Capable of being closed by an OPERABLE containment automatic isolation system, or
  2. Closed by at least one manual valve, blind flange, or deactivated automatic valve secured in its closed position, except as provided in Specification 3.6.4.
- b. All containment equipment hatches are closed and sealed.
- c. Each containment air lock is in compliance with the requirements of Specification 3.6.1.4.
- d. The containment leakage rates are within the limits of Specification 3.6.1.3.
- e. The suppression pool is in compliance with the requirements of Specification 3.6.3.1.
- f. The sealing mechanism associated with each primary containment penetration; e.g., welds, bellows or O-rings, is OPERABLE.

### PROCESS CONTROL PROGRAM (PCP)

1.33 The PROCESS CONTROL PROGRAM shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Part 20, 10 CFR Part 61, 10 CFR Part 71 and

### 3/4.6 CONTAINMENT SYSTEMS

#### 3/4.6.1 PRIMARY CONTAINMENT

##### PRIMARY CONTAINMENT INTEGRITY - OPERATING

##### LIMITING CONDITION FOR OPERATION

---

3.6.1.1 PRIMARY CONTAINMENT INTEGRITY - OPERATING shall be maintained.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2\* and 3.

ACTION:

Without PRIMARY CONTAINMENT INTEGRITY - OPERATING, restore PRIMARY CONTAINMENT INTEGRITY - OPERATING within 1 hour or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

##### SURVEILLANCE REQUIREMENTS

---

4.6.1.1 PRIMARY CONTAINMENT INTEGRITY - OPERATING shall be demonstrated:

- a. After each closing of each penetration subject to Type B testing, except the primary containment air locks, if opened following Type A or B test, by leak rate testing the seals with gas at Pa, 7.6 psig, and verifying that, when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Surveillance Requirement 4.6.1.3.d for all other Type B and C penetrations, the combined leakage rate is less than 0.60 La.
- b. At least once per 31 days by verifying that all primary containment penetrations\*\* not capable of being closed by OPERABLE primary containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in position, except as provided in Specification 3.6.4.
- c. By verifying each primary containment air lock is in compliance with the requirements of Specification 3.6.1.4.
- d. By verifying the suppression pool is in compliance with the requirements of Specification 3.6.3.1.

\*See Special Test Exception 3.10.1

\*\*Except valves, blind flanges, and deactivated automatic valves which are located inside the primary containment, steam tunnel or drywell, and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except such verification need not be performed more often than once per 92 days.

## CONTAINMENT SYSTEMS

### PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING

#### LIMITING CONDITION FOR OPERATION

---

3.6.1.2 PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING shall be maintained.

APPLICABILITY: Operational Condition\*#

#### ACTION:

Without PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING, suspend handling of irradiated fuel in the primary containment, CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

#### SURVEILLANCE REQUIREMENTS

---

4.6.1.2 PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING shall be demonstrated:

- a. Within 24 hours prior to entering and at least once per 24 hours during Operational Condition\* by verifying that all primary containment penetrations required to be closed during accident conditions are closed by hatches, valves, blind flanges, or deactivated automatic valves secured in position.\*\*
- b. By verifying each containment air lock is in compliance with the requirements of Specification 3.6.1.4.

---

\*When handling irradiated fuel in the primary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

\*\*Up to twelve vent and drain line pathways may be opened under administrative control for the purposes of surveillance testing provided the total calculated flow rate through the open vent and drain line pathways is less than or equal to 70.2 cfm.

#See Special Test Exception 3.10.1.

## REFUELING OPERATIONS

### 3/4.9.3 CONTROL ROD POSITION

#### LIMITING CONDITION FOR OPERATION

---

3.9.3 All control rods shall be inserted.\*

APPLICABILITY: OPERATIONAL CONDITION 5, during CORE ALTERATIONS.\*\*

ACTION:

With all control rods not inserted, suspend all other CORE ALTERATIONS.

#### SURVEILLANCE REQUIREMENTS

---

4.9.3 All control rods shall be verified to be inserted, except as above specified:

- a. Within 2 hours prior to:
  - 1. The start of CORE ALTERATIONS.
  - 2. The withdrawal of one control rod under the control of the reactor mode switch Refuel position one-rod-out interlock.
- b. At least once per 12 hours.

---

\*Except (1) control rods removed per Specification 3.9.10.1 or 3.9.10.2 or (2) one control rod may be withdrawn under control of the reactor mode switch Refuel position one-rod-out interlock.

\*\*See Special Test Exception 3.10.3.

## REFUELING OPERATIONS

### 3/4.9.4 DECAY TIME

#### LIMITING CONDITION FOR OPERATION

---

3.9.4 The reactor shall be subcritical for at least 24 hours.\*

APPLICABILITY: OPERATIONAL CONDITION 5, during movement of irradiated fuel in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 24 hours, suspend all operations involving movement of irradiated fuel in the reactor pressure vessel.

## SURVEILLANCE REQUIREMENTS

---

4.9.4 The reactor shall be determined to have been subcritical for at least 24 hours by verification, prior to movement of irradiated fuel in the reactor pressure vessel, of the date and time of subcriticality.

---

\*The reactor shall be subcritical for at least 80 hours prior to opening vent and drain line pathways under the provisions of Specification 3.6.1.2.

### 3.4.6 CONTAINMENT SYSTEMS

#### BASES

---

#### 3/4.6.1 CONTAINMENT

##### 3/4.6.1.1 PRIMARY CONTAINMENT INTEGRITY - OPERATING

PRIMARY CONTAINMENT INTEGRITY OPERATING ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR Part 100 during accident conditions.

##### 3/4.6.1.2 PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING

PRIMARY CONTAINMENT INTEGRITY - FUEL HANDLING ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage pathways and associated leak rates assumed in the accident analysis. This restriction will limit the site boundary radiation doses to less than 25% of the 10 CFR 100 limits during a postulated fuel handling accident within the primary containment.

The footnote allows the opening of vent and drain line pathways for the purposes of performing leak rate surveillance testing. Offsite doses as a result of a postulated fuel handling accident inside primary containment were calculated based upon the flow rate which would be produced through twenty open 3/4 inch vent and drain line pathways with a 0.367 inch water gauge differential pressure between the containment and auxiliary buildings. This would result in a total calculated flow rate out of these open vent and drain lines of 70.2 cubic feet per minute. Accordingly, this footnote allows the opening of up to twelve vent and drain line pathways for the purposes of performing leak rate surveillance testing provided the total calculated flow rate, considering the specific containment and auxiliary building differential pressure, does not exceed 70.2 cubic feet per minute as used in the above analyses.

##### 3/4.6.1.3 PRIMARY CONTAINMENT LEAKAGE

The limitations on primary containment leakage rates ensure that the total primary containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure of 7.6 psig, Pa. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 La, during performance of the periodic tests, to account for possible degradation of the primary containment leakage barriers between leakage tests.

Operating experience with the main steam line isolation valves has indicated that degradation has occasionally occurred in the leak tightness of the valves; therefore, the special requirement for testing these valves.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J to 10 CFR 50.

## CONTAINMENT SYSTEMS

### BASES

---

#### 3/4.6.1.4 PRIMARY CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the primary containment air locks are required to meet the restrictions on PRIMARY CONTAINMENT INTEGRITY-OPERATING and the primary containment leakage rate given in Specifications 3.6.1.1 and 3.6.1.3. The specification makes allowances for the fact that there may be long periods of time when the air locks will be in a closed and secured position during reactor operation. Only one closed door in each air lock is required to maintain the integrity of the primary containment.

#### 3/4.6.1.5 MAIN STEAM-POSITIVE LEAKAGE CONTROL SYSTEM

Calculated doses resulting from the maximum leakage allowance for the isolation valves in the postulated LOCA situations would be a small fraction of the 10 CFR 100 guidelines. Operating experience has indicated that degradation has occasionally occurred in the leak tightness of the MSIVs. Inclusion of the specified leakage control system will prevent untreated leakage from the MSIVs when isolation of the primary system and containment is required. This system includes the Main Steam Shutoff Valves (MSSV).

#### 3/5.6.1.6 PRIMARY CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the unit. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 7.6 psig in the event of a LOCA. A visual inspection in conjunction with Type A leakage tests is sufficient to demonstrate this capability.

#### 3/4.6.1.7 PRIMARY CONTAINMENT INTERNAL PRESSURE

The limitations on primary containment internal pressure ensure that the containment peak pressure of 7.6 psig does not exceed the design pressure of 15.0 psig during LOCA conditions or that the external pressure differential does not exceed the design maximum external pressure differential of + 0.6 psid or the differential at which water would overflow the weir wall into the drywell of 0.58 psid. The limit of -0.3 to + 0.3 psig for initial primary containment internal pressure will limit the peak primary containment pressure to 7.6 psig which is less than the design pressure and is consistent with the safety analysis.

#### 3/4.6.1.8 PRIMARY CONTAINMENT AVERAGE AIR TEMPERATURE

The limitation on primary containment average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 185°F during LOCA conditions and is consistent with the safety analysis.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 35 TO FACILITY OPERATING LICENSE NO. NPF-47

GULF STATES UTILITIES COMPANY

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By letter dated September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989, Gulf States Utilities Company (GSU) (the licensee) requested an amendment to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The proposed amendment would allow up to 12 3/4-inch vent and drain pathways to be open during fuel handling activities for the purpose of performing Type C local leak rate testing as required by Appendix J to 10 CFR Part 50. The required decay time for irradiated fuel before the vent and drain lines could be opened for Type C testing would be 80 hours to reflect the assumption used in the licensee's dose calculations.

The current River Bend Technical Specifications (TS) Section 3/4.6.1.2 requires the suspension of handling irradiated fuel in the primary containment if its integrity is not maintained. As a result, most Type C leak rate surveillance testing required by Appendix J to 10 CFR Part 50 cannot be performed while refueling is in progress. The requested TS changes will permit some Type C leak rate testing in parallel with refueling to reduce refueling outage duration while still maintaining control to reestablish containment integrity. Each penetration into the primary containment is typically provided with vent and drain valves to facilitate Type C leak rate testing for the inboard and outboard containment isolation valves.

The licensee's September 28, 1988 application requested approval to have up to 20 vent and drain lines open under administrative control during fuel handling activities for the purpose of performing Type C leak rate testing. The total flow rate out these vent and drain pathways, in the event of a fuel handling accident, was calculated by the licensee to be 70.2 cubic feet per minute (cfm). This was based on 3/4-inch vent and drain line pathways open with a pressure differential of 0.367-inch water gauge between the primary containment and the auxiliary building. Following discussions with the staff, the licensee revised the request by letter dated February 6, 1989. The revised request proposed that 12 vent and drain pathways be permitted to be open, or the number of pathways resulting from a calculated flow rate of 70.2 cubic feet per minute, whichever is less. In the event the pressure differential between the containment and the reactor building significantly exceeds 0.367-inch water gauge, the limit of 70.2 cfm will limit the number of vent and pathways allowed open.



The revised limit was chosen based on three testing crews, each working on one of the following systems: standby service water, reactor plant component cooling water, and residual heat removal.

TS Definition 1.31 and TS 4.6.1.2 would be modified to revise the containment integrity requirements during fuel handling to permit up to 12 vent and drain lines to be opened for the purpose of performing local leak rate tests. TS 3.9.4 would be modified to specify that the irradiated fuel must decay 80 hours before the vent and drain lines can be opened for the purpose of conducting these tests. Bases Section 3/4.6.1 would also be revised to reflect the above changes.

## 2.0 EVALUATION

The NRC staff performed an evaluation of the offsite radiological consequences resulting from a fuel handling accident inside the primary containment with the vent and drain pathways open during the Type C testing.

In the River Bend Safety Evaluation Report (NUREG-0989) dated May 1984, the staff previously evaluated a postulated fuel handling accident using assumptions contained in Positions C.1.a through C.1.k of Regulatory Guide 1.25 and the procedures specified in Standard Review Plan (SRP) Section 15.7.4 (NUREG-0800). In addition, the specified assumptions postulate a single dropped fuel assembly, the kinetic energy of which is expended with perfect mechanical efficiency in breaking open the maximum possible number of fuel rods. Instantaneous release of noble gases and radioiodine vapor from the gaps of the broken rods occurs as gas bubbles pass up through the water covering the fuel. All radioactivity reaching the primary containment atmosphere is exhausted within 2 hours through engineered safety feature filtered exhaust systems to the environment.

In this evaluation the staff performed the offsite dose calculations using the same assumptions previously used for a postulated fuel handling accident with the following two exceptions:

1. An unmitigated release of 70.2 cfm from the primary containment through up to 20 open vent and drain lines (original proposal) in addition to the maximum allowable unidentified primary containment leakage of 0.26 percent per day. The licensee's revised request, which specifies 12 open vent and drain lines, or the number resulting from a calculated flow of 70.2 cfm, whichever is less, is bounded by the above assumption.

The licensee stated in their proposal that the leak rate test procedure (Type C test) typically involves the following:

- (a) Draining of the liquid from the test volume (between inboard and outboard manually isolation valves) and refill, which will take less than 8 hours each on the average. During these operations (drain and refill), a water seal will exist which would prevent release of airborne radioactivity from the primary containment.

- (b) Connection and disconnection of test apparatus to and from the vent valves. The potential for airborne radioactivity releases from the primary containment does exist through a vent valve, a drain valve, and two inboard and cutboard containment isolation valves during the time intervals between (a) completion of test volume drain and connection of test apparatus; and (b) disconnection of test apparatus and start of refill. At no time during the entire testing process are the containment isolation valves disabled. Therefore, the containment isolation function provided by these valves would remain available if the valves are called upon to perform their isolation function.
  - (c) Leak rate testing. The leak rate test itself will take less than 4 hours on the average. No airborne radioactivity release pathways exist during actual leak rate testing.
2. A credit is given for 10 percent mixing of airborne radioactive material within primary containment atmosphere prior to release to the secondary containment (the licensee proposed 50 percent mixing credit).

The River Bend primary containment is a Mark III pressure suppression containment with a free standing steel structure with a total free air volume of approximately  $1.2 \times 10^6$  cubic feet. The refueling floor is at elevation 114'. All of the penetrations subject to Type C local leak rate testing are located between elevations 114' and 141'. Therefore, in the event of a fuel handling accident, airborne radioactive material would have to travel a minimum of 45 feet downward through refueling floor open areas (4.5% of the total refueling floor surface due to the openings for the stairways, the equipment hoist area and the elevator) to reach the first possible open penetration to escape into the auxiliary or fuel building (the secondary containment).

The River Bend primary containment is also provided with two safety-related unit coolers and one non-safety unit cooler (each rated for 50,000 cfm) for containment cooling and mixing. During normal operation and refueling activities, one safety-related and one non-safety related unit coolers are in operation. The free air volume of the upper containment (above the refueling floor) occupies approximately 56 percent of the total containment free air volume and the staff estimates air volume between elevations 141' (highest elevation for the leak test penetration) and 186' (refueling floor) to be approximately 27 percent of the total containment free air volume. Based on this volume available for mixing, it is the staff's judgment that there is reasonable assurance that airborne radioactivity released as a result of a fuel handling accident will be mixed with at least 10 percent of the primary containment atmosphere prior to release through a penetration into the secondary containment.

The offsite doses computed for the River Bend Exclusion Area (EBA) and Low Population Zone (LPZ) boundaries using the above assumptions, assumptions contained in Regulatory Guide 1.25, and the procedures specified in SRP Section 15.7.4, were 21 rem to the thyroid and 6 rem to the whole body at EBA and 2.7 rem to the thyroid and 0.6 rem whole body at LPZ. These calculated offsite doses are well within the exposure guidelines of 10 CFR Part 100 and are within the acceptance criteria given in Standard Review Plan Section 15.7.4.

Flow from the containment through the open vent and drain pathway could occur only if the inboard containment isolation valve is open. The licensee stated that administrative controls with the implementation when utilizing the proposed change will ensure that the containment isolation valves will not be disabled at any time during the testing process and, therefore, the containment isolation function provided by the valves will remain available if called upon to perform the isolation.

Additionally, administrative controls will ensure that the number of 3/4 inch vent and drain line pathways opened at one time will (1) be only those needed to support active leakage rate testing, (2) be limited to twelve or the number resulting from a total calculated flow rate of 70.2 cfm, whichever is less, (3) assume that containment to auxiliary building differential pressure and all open vent and drain line pathways are monitored at least once per two hours, and (4) assure that at least one person will be assigned to each open penetration. These administrative controls will ensure that timely action will be taken to use any open vent and drain valve and the isolation valve in the event of a fuel handling accident.

### 3.0 CONCLUSION

The staff concludes that based on the operability of the containment isolation valves during the testing phase, the administrative controls, the size of the vent and drain valves, and the low offsite dose consequences if the valves are assumed to remain open during a fuel handling accident, the proposed changes to the River Bend Technical Specifications concerning the primary containment integrity during fuel handling are acceptable.

### 4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on January 10, 1989 (54 FR 874).

Accordingly, based upon the environmental assessment, the Commission has determined that issuance of this amendment will not have a significant effect on the quality of the human environment.

## 5.0 CONCLUSION

The staff 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, and (2) 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 charges are acceptable, and they are hereby incorporated into the River Bend Unit 1 Technical Specifications.

Dated: March 3, 1989

Principal Contributors: J. Lee  
R. Goel

UNITED STATES NUCLEAR REGULATORY COMMISSIONGULF STATES UTILITIES COMPANYDOCKET NO. 50-458NOTICE OF ISSUANCE OF AMENDMENTTC FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 35 to Facility Operating License No. NPF-47, issued to Gulf States Utilities Company, (the licensee), which revised the Technical Specifications for operation of the River Bend Station, Unit 1, located in West Feliciana Parish, Louisiana.

The amendment was effective as of the date of its issuance.

The amendment revised the Technical Specifications to (1) allow performance of a limited number of Type C leak rate tests of liquid filled lines during refueling activities; and (2) increase the decay time required for the irradiated fuel before the vent and drain line pathways can be opened for the purpose of performing the local leak rate tests.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter 1, which are set forth in the license amendments.

The Notice of Consideration of Issuance of Amendment was published in the Federal Register on October 24, 1988 (53 FR 41634). No request for a hearing or petition for leave to intervene was filed following the notices.

8903140187 890303  
PDR ADDCK 05000458  
PDC

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action, see: (1) the application for amendment dated September 28, 1988, as supplemented November 30, 1988, and modified February 6, 1989; (2) Amendment No.35 to Facility Operating License No. NPF-47; and (3) the Commission's related Safety Evaluation and Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 2120 L Street N.W., Washington, D.C. 20555; and at the Government Documents Department, Louisiana State University, Baton Rouge, Louisiana 70803. A copy of item (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects - III, IV, V and Special Projects.

Dated at Rockville Maryland, this 3rd day of March 1989.

FOR THE NUCLEAR REGULATORY COMMISSION

*Walter A. Paulson*

Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation