



**GULF STATES UTILITIES COMPANY**

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September 19, 1985  
RBG-22,126  
File Code: G9.5,  
G9.33.4

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Denton:

River Bend Station-Unit 1  
Docket No. 50-458

The attached information is provided in response to the River Bend Station (RBS) Safety Evaluation Report Supplement No. 3, Section 13.5.2.3 (Attachments 1 and 2) and additional information requested during a September 12, 1985 meeting concerning containment venting (Attachment 3). The RBS Emergency Operating Procedures are based on the BWR Emergency Procedure Guidelines, Revision 3. The proposed containment venting path includes the Hydrogen Purge System. This information satisfies License Condition No. 16, Attachment 5, Item 3 contained in the RBS Operating License No. NPF-40.

Sincerely,

for J. E. Booker  
Manager-Engineering,  
Nuclear Fuels & Licensing  
River Bend Nuclear Group

JEB/WJR/ERG/<sup>ERG</sup>RJK/kt

Attachments

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ATTACHMENT 1

Response to SER Supplement No. 3, Section 13.5.2.3

1. River Bend Station (RBS) has evaluated the capability of its purge valves to operate under the expected conditions in the vent path. From the results of the evaluation, it is concluded that the purge valves are capable of opening at the proposed venting pressure.
2. RBS has evaluated the suppression pool flashing condition under the proposed venting conditions and has concluded that the results are acceptable. The flow rate to suppression pool surface area ratio is small and therefore, with regard to the evaluation, is considered insignificant.
3. Gulf States Utilities Company has determined that the required number of safety/relief valves will provide the required pressure relief at the proposed venting pressure to maintain the reactor in a depressurized condition.
4. The RBS Ultimate Capacity Analysis was submitted in letters dated September 30, 1983 and August 8, 1985 (RBG's-16,085 and 21,821, respectively). The lower bounds of the ultimate capacity analysis exceeds the proposed venting pressure.
5. The proposed containment venting procedure minimizes offsite dose consequences by utilizing the scrubbing capabilities of the suppression pool and using a filtered vent path via the Hydrogen Purge Valves.

## ATTACHMENT 2

### EOP/EPG Deviation Justification and Bases

The documentation provided herein discusses the River Bend Station Containment Venting Emergency Operating Procedure (EOP-0002, Step 3.4) bases and deviations from the BWR Owners Group Emergency Procedure Guidelines, Rev. 3. After discussions with the Staff on September 12, 1985, GSU proposed that the containment vent path would be through the filtered 3 inch Hydrogen Purge Valves at a pressure of 20 psig up to the first refueling outage. Prior to operation following the first refueling outage, GSU will discuss with the Staff the results of its reviews for environmental conditions within the Auxiliary Building, capabilities within the existing design and a proposed venting pressure below the containment ultimate capacity analysis lower limit (less than 53 psig). The vent path through the 36 inch Containment Purge Valves will not be included in EOP-0002, Step 3.4 until the above issues have been resolved with the Staff.

## SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-1

EOP STEP: EOP-0002 3.4.1,

### JUSTIFICATION OF DIFFERENCES:

RBS initiates available containment cooling (unit coolers) in agreement with EPGs. Containment purge system not used for containment pressure control. Purge system used for temperature control if pressure less than 2 psig, see section 3.3 of this procedure.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-2

EOP STEP: NA

JUSTIFICATION OF DIFFERENCES:

RBS has no containment sprays therefore no EOP Step. Note containment unit coolers started in Step 3.4.1.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-3

EOP STEP: NA

JUSTIFICATION OF DIFFERENCES:

RBS has no drywell sprays therefore no EOP Step. Note drywell unit coolers started in Step 3.4.4.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.2

JUSTIFICATION OF DIFFERENCES:

Suppression pool cooling initiated at 2 Psig to provide an additional heat sink. If event includes SRV discharge and decay heat to suppression pool then suppression pool cooling will be initiated sooner per Section 3.1 "Monitor and Control Suppression Pool Temperature" of this EOP.

## SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-4

EOP STEP: EOP-0002 3.4.3

### JUSTIFICATION OF DIFFERENCES:

This EOP step is included to address small line LOCA in drywell with high bypass, although still less than  $1.0 \text{ ft}^2$  A/K. Analysis indicates some events may result in high containment pressure if RPV depressurization not initiated. Note if event includes decay heat removal through SRV's RPV depressurization will be controlled by suppression pool temperature and level. See Sections 3.1 and 3.5 of this procedure.



SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: N/A

EOP STEP: EOP-0002 3.4.4

JUSTIFICATION OF DIFFERENCES:

RBS initiates drywell cooling if available for heat removal. Note if event includes decay heat removal to suppression pool, drywell cooling will be initiated by Section 3.2, "Drywell Temperature Control."

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.5, C3.4.5

JUSTIFICATION OF DIFFERENCES:

Samples taken to ensure Emergency Director is aware of containment environment prior to venting containment in Step 3.4.8 through SGTS and to address possible hydrogen generation. Note RBS procedures will also require containment atmosphere be monitored. Step C3.4.5 addresses possible loss of equipment of systems required.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-5

EOP STEP: EOP-0002 3.4.6

JUSTIFICATION OF DIFFERENCES:

RBS initiates RPV flooding as directed in the EPG.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-6

EOP STEP: NA

JUSTIFICATION OF DIFFERENCES:

RBS does not have Suppression Pool or Drywell Sprays.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.7

JUSTIFICATION OF DIFFERENCES:

GSU requires specific approval by Emergency Director (Plant Manager or alternate) to vent containment as directed in Step 3.4.8

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: PC/P-7

EOP STEP: EOP-0002 3.4.8

JUSTIFICATION OF DIFFERENCES:

River Bend Station initiates containment venting as directed in the EPG. Venting at 20 psig is less than the analyzed containment ultimate pressure. The required equipment has been reviewed for environmental effects. The effluent will be filtered by the Standby Gas Treatment System.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.9, C3.4.9

JUSTIFICATION OF DIFFERENCES:

RBS will isolate the containment vent path at 5 psig to limit release of containment atmosphere. Contingency C3.4.9 directs operator to reenter procedure at Step 3.4.7 if decay heat removal is not restored.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.10, C3.4.10

JUSTIFICATION OF DIFFERENCES:

Containment heat removal systems used to maintain containment pressure. C3.4.10 to address negative pressure transient due to steam condensation. -0.5 psig is greater than containment design of -0.6 psig.



SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP NA

EOP STEP: EOP-0002 3.4.11. C3.4.11

JUSTIFICATION OF DIFFERENCES:

Valves opened to allow reverse venting to protect containment from low air mass due to steam condensation. Contingency C3.4.11 reduces decay heat removal to control negative pressure transient. The -0.75 psig exceeds the containment design negative pressure but is less than the ultimate negative pressure capability.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 3.4.12

JUSTIFICATION OF DIFFERENCES:

Provides operator with criteria for reestablishing containment integrity after reverse venting.

CAUTIONS

EOP Caution 8	Addresses EPG Caution 8
Caution 9	Addresses EPG Caution 21
Caution 10	And Enclosures 6, (c), (d) addresses EPG Caution 22
Caution 11	And Step 3.4.2 addresses EPG Caution 18
Caution (b)	Warns operator of possible release of radionuclides to environment

NOTE: Enclosures (a) and (b) and Caution (a) are being reserved for later use.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: Caution 8

EOP STEP: EOP-0002 Section 3.4 Caution 8

JUSTIFICATION OF DIFFERENCES:

EOP caution in accordance with EPG.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: Caution 21

EOP STEP: EOP-0002 Section 3.4 Caution 9

JUSTIFICATION OF DIFFERENCES:

EOP caution in accordance with EPG.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: Caution 22

EOP STEP: EOP-0002 Section 3.4 Caution 10

JUSTIFICATION OF DIFFERENCES:

EOP caution 10 and enclosures 6 and (c) address EPG caution 22.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: Caution 18

EOP STEP: EOP-0002 Section 3.4 Caution 11

JUSTIFICATION OF DIFFERENCES:

EOP caution 11 and step 3.4.2 address EPG caution 18.

SUPPORTING DOCUMENTATION OF EOP DEVELOPMENT

EPG STEP: NA

EOP STEP: EOP-0002 Section 3.4 Caution (b)

JUSTIFICATION OF DIFFERENCES:

Warns operator of possible release of radionuclides to environment.



### ATTACHMENT 3

#### Request for Additional Information from the September 12, 1985 Staff Meeting

1. The criteria used by the Emergency Director to vent containment shall consider the status of Emergency Plan Implementation, the existing meteorology, and the status of the plant including anticipated rate of pressurization, equipment availability and containment radioactivity. This criteria will be included in an Emergency Implementing Procedure.
2. The ability of the 36 inch Containment Purge Valves to open at the anticipated vent pressure was evaluated. In performing this analysis, the ultimate material properties were evaluated and used to determine the stress limits. In summary, the evaluation determined that the valves can open at pressures in excess of the containment ultimate capacity analysis lower limit (53 psig). A static and dynamic evaluation is being performed to determine the maximum pressure conditions under which the duct work connected to the outboard 36 inch purge valve will be subjected to during the venting process. Preliminary results indicate that the ductwork will withstand the conditions resulting from at least 10-12 psig. An additional review is being performed to determine the environmental conditions within the Auxiliary Building should steam be released due to containment venting through this duct work. The results of these reviews will be provided and discussed with the Staff prior to operations following the first refueling outage.
3. The purge valves, required to close the proposed vent path, have been analyzed to isolate under pressures less than 10 psig (See RBG-19,385 dated November 8, 1984)