



GULF STATES UTILITIES COMPANY

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File No. G9.5, G9.8.6.2

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 - Units 1 & 2
Docket No. 50-458/50-459

Enclosed is Gulf States Utilities Company's (GSU) response to the Staff position regarding the River Bend Station (RBS) Drywell/Containment Purge System transmitted to Mr. W. J. Cahill from Mr. A. Schwencer on January 23, 1984. Discussions with reviewers from the Containment Systems Branch (CSB) on January 31, 1984 clarified the bases for the position and detailed GSU's responses to the extent necessary for input to the Safety Evaluation Report (SER). This transmittal serves to formally document GSU's position and clarify RBS's drywell and containment purge system.

Sincerely,

J. E. Booker

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

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GSU Response to the Staff Positions on Purging

1. STAFF POSITION

Continuous containment purging through large diameter valves will not be allowed. We will require the applicant to develop appropriate interim guidelines that will establish provisions for a reduction in the use of the containment purge system. These guidelines will consider limitations on airborne activity levels to satisfy the as low as reasonably achievable (ALARA) levels and overall containment air quality in determining when use of the purge system is not needed. The interim guidelines shall be furnished to the NRC staff six months before the initial fuel load date.

RESPONSE

GSU will estimate the number of hours per day purge is required to provide the required access. From this information, GSU will develop appropriate interim guidelines to establish a reduction in the use of the purge system. These guidelines will consider limitations on airborne activity levels, ALARA, and overall containment air quality in determining when purging is required. Submittal of this program will be at least six months prior to fuel load.

2. STAFF POSITION

The applicant shall commit to implement a data collection effort to justify the need for containment purging. Before startup after the first regularly scheduled refueling outage, the applicant shall use the results from the above program (based on containment purge system (CPS) operating experience information) to evaluate the plant's need for purging. A summary of the evaluation shall be provided to the NRC staff before the plant returns to operation.

RESPONSE

GSU will implement a data collection program, during the first fuel cycle, to collect and evaluate RBS containment purge operating experience information. An evaluation of this information will be made to determine if personnel exposure can be reduced, if airborne concentrations were maintained less than 25% of the maximum permissible concentration as specified in 10CFR20, and if changes to the interim purge guidelines are warranted.

GSU is aware that data gathered during the first fuel cycle may not necessarily be indicative of dynamic plant conditions and will consider future plant usage in evaluation of the interim guidelines. Evaluation of the interim guidelines will include any applicable Mark III purge experience.

3. STAFF POSITION

The applicant shall commit to develop a containment access management program so that access time requirements will be minimized as appropriate. Considerations of the total spectrum of activities to be performed, as well as when and how those activities can be accomplished, will be included. A description of this program shall be furnished to the NRC staff six months prior to the initial fuel load date.

RESPONSE

GSU will develop a containment access management program so that personnel access and residence time in containment will be minimized as appropriate. Consideration of the total spectrum of activities to be performed inside containment, as well as when and how those activities can be accomplished, will be studied. A description of this program will be furnished six months prior to fuel load.

4. STAFF POSITION

Purging of the containment shall be accomplished by use of a low-volume purge system, i.e., purge valve size shall not exceed 8" for Operating Modes 1, 2, and 3 (i.e., power operation, start up and hot shutdown). However, to avoid delays in critical path testing of the purge system and the resultant impact on fuel load schedules, it is proposed that the existing system be used until it is determined, based on Items 1-3 above, when purging is needed and the line size to accomplish this. The applicant shall also commit to submit for staff review all available data and proposed programs that demonstrate the reliability of the 36-inch diameter valves utilized at River Bend Station six months prior to fuel load.

RESPONSE

Based on GSU's stated position on Items 1-3 above, GSU is using the existing system equipment for limited purge in accordance with the interim guidelines. Based on the results and evaluation of the containment purge operational data gathering program in Item 2, the purge guidelines for the first fuel cycle will be evaluated to determine if modifications are required. In addition, GSU will discuss with the staff the need for purge system design changes based on the operational data base and make any required changes at the second refueling outage. GSU will also submit all available data and information which demonstrates the reliability of the existing 36 inch purge supply and exhaust butterfly valves at least six months prior to fuel load.

5. STAFF POSITION

Purge/vent valves that are to be used during Operating Modes 1 through 3 shall meet all staff requirements set forth in Branch Technical Position 6-4.

RESPONSE

GSU will comply with the intent of BTP 6-4 with the following clarifications:

- 1.(a) Comply
- 1.(b) The current number of purge supply and exhaust lines is limited to one supply and one exhaust. If future modifications add any additional supply and exhaust lines then only one line at a time will be operated in Modes 1, 2 and 3.
- 1.(c) The current design utilizes 36 inch containment isolation valves for the purge supply and exhaust lines. The size of any future additional flow path will be based on the required flow to control containment airborne concentrations and to adequately ventilate the containment.
- 1.(d-g) Comply
- 2. Comply
- 3. Recirculation of containment atmosphere is accomplished through an external purge filter.
- 4. Comply
- 5.(a-d) Comply

6. STAFF POSITION

The drywell supply and exhaust isolation valves shall be normally closed during Modes 1 through 3 except:

- a. To accommodate drywell pressure control or reduce drywell activity levels in Operating Mode 3, the applicant shall limit use of the drywell purge system to 90 hours per year (cumulative) for Operating Mode 3.
- b. To accommodate the need for drywell pressure control during Operating Modes 1 and 2.
 - (1) Either the exhaust or supply lines of the drywell purge system may be opened, but both lines shall not be opened at the same time,
 - (2) While venting the drywell, the containment shall not be vented or purged, and
 - (3) The total time of venting the drywell shall be limited to five hours per year (cumulative) for Operating Modes 1 and 2. This restriction will be withdrawn upon receipt and NRC approval of analyses to demonstrate acceptable consequences on the containment structure and the enclosed equipment following onset of the most limiting primary system break during use of the drywell purge system.

RESPONSE

- a. GSU does not plan to use the drywell purge supply or exhaust for drywell pressure control in Mode 3 (see discussion below). GSU will limit the use of the drywell purge system in Operating Mode 3. A specific value will be established considering drywell access requirements and will be submitted at least six months prior to fuel load.
- b. Analysis indicates that drywell pressure control will be required and can be accomplished using either the drywell purge system or the drywell hydrogen mixing system. The line size for the purge system is 24" while for the hydrogen mixing system the line size is 6". The drywell purge valves receive a LOCA closing signal. The hydrogen mixing system valves close on a LOCA signal which can be overridden by the operator upon verifying that a false LOCA signal from a loss of offsite power caused closure. Operation of either system for drywell pressure control is acceptable; however, the use of one of the hydrogen mixing system inlet paths for pressure control is preferred due to the effective drywell bypass made available by the respective flow paths. The potential for drywell bypass with the 6 inch hydrogen mixing system inlet is 0.20 sq. ft. which is bounded by the analyzed allowable bypass for the entire spectrum of breaks for RBS. The potential for drywell bypass with the 24 inch drywell purge line is approximately 2.95 sq. ft. which is greater than the allowable bypass for the small break range. Based on acceptable containment pressurization consequences under all break conditions with one hydrogen mixing inlet path open, GSU proposes to use this path for drywell pressure control with no limitations on total time for venting in a year. While venting the drywell using the hydrogen mixing system, the containment will not be vented or purged.

7. STAFF POSITION

If purging (either drywell or containment) is through the SGTS, requirements 5b of Branch Technical Position 6-4 should be met, otherwise, the following restrictions should be implemented.

- a. Whenever the purge system is in use during Operating Modes 1, 2, and 3, only one of the two SGTS trains shall be used, and
- b. Both SGTS trains are determined to be operable whenever the purge system is in use.

RESPONSE

Normal containment purging (7000 cfm, in Operating Modes 1, 2 and 3) will be through the containment purge exhaust filter. The two SGTS trains will not be used in the fast purge mode (25,000 cfm) in Operating Modes 1, 2 or 3.

8. STAFF POSITION

The hydrogen mixing system shall not be opened during Operating Modes 1 through 3 for drywell pressure control or airborne activity level reduction since the valves on this system receive no LOCA isolation signal.

RESPONSE

See the response to Item 6.

9. STAFF POSITION

The purging system (drywell and/or containment) shall not be utilized for temperature/humidity control during Operating Modes 1, 2 and 3.

RESPONSE

Containment purging will not be utilized for temperature/humidity control during Operating Modes 1, 2 and 3.