GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775

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July 8, 1985
RBG- 21482
File Nos. G9.5

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

Enclosed for your review (Enclosure 2) are revisions to the River Bend Station Final Safety Analysis Report (FSAR) which are editorial in nature. Enclosure 1 provides a discussion of each of these revisions. No impact is expected on the Safety Evaluation Report or the proposed Technical Specifications as a result of these revisions which will be included in a future FSAR amendment.

Sincerely,

J. E. Booker

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

JEB/ERG/je

Enclosures (2)

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ENCLOSURE 1

A. Section 1.6 now provides the location of material included by reference in the FSAR.

B. Appendix 6A, Page 6A.10-2, provides additional clarification for the calculation of impact loads on structures due to pool swell.

C. Page 7.4-11b has been updated to include additional controls on the remote shutdown panel.

D. Table 7.5-1, Page 2 of 12, has been corrected to show a single MS-PLCS steam line pressure meter.

E. The responses to various questions on Chapter 7 have been updated to reflect previous transmittals. No impact is expected on either the SER or the proposed Technical Specifications.

F. Page 9A.3-40a has been corrected to comply with standard RBS system designations.

G. Pages 14.2-3 and 14.2-15 are additional organizational corrections which supplement those provided in our letter of June 26, 1985 (RBG-21,412).

1.6 MATERIAL INCORPORATED BY REFERENCE

Documents which are referenced in this FSAR are listed at the end of the sections in which they have been referenced. 21

TABLE 1.6-1

MATERIAL INCORPORATED BY REFERENCE

~~INFORMATION WILL BE PROVIDED IN A FUTURE AMENDMENT.~~

DELETE THIS TABLE.

Impact loads on structures attached to the containment wall are described in Section 6A.6.

15 Impact loads acting on structures are based on a pool swell velocity which varies with height above the pool surface. This variation is given by:

20 $V = 5H\,(2.6 - 0.506\sqrt{H})$ for $H < 10$ ft*

$V = 50$ ft/sec for $20 \geq H \geq 10$ ft

$V = \sqrt{3788 - 64.4\,H}$ for $30 \geq H > 20$ ft

21 20 Where H is the distance above the pool surface for calculation of P'.

6A.10.2 Drag Loads

The drag load on grating is based on Fig. 6A.10-4. The drag load found from this figure is multiplied by $(V/40)^2$ if V is greater than 40 ft/sec.

For drag loads on flat plates, Fig. 6A.10-5 is used. If the velocity is greater than 40 ft/sec, the drag load is multiplied by $(V/40)^2$. If the shorter side (b) is attached to the containment or drywell wall, the abscissa in Fig. 6A.10-5 becomes 2(a/b) instead of a/b.

15 For other shapes, Fig. 6A.10-6 is used to calculate the pressure for 40 ft/sec. If the pool swell velocity is greater than 40 ft/sec, the pressure is multiplied by $(V/40)^2$.

For all drag loads, the duration is 0.5 sec.

6A.10.3 Fallback Loads

As described in Reference 1 (Section 3B.10.3).

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20 *V less than 20 ft/sec shall not be used.

1SWP*MOV81A - Motor-operated valve (drywell/containment unit cooler return)

1SWP*MOV507A - Motor-operated valve (drywell/containment unit cooler supply)

1SWP*MOV73A - Motor-operated valve (HPCS room unit cooler supply) 20

1HVN*MOV22A - Motor-operated valve (containment unit cooler return)

1SWP*MOV171 - Motor-operated valve (HPCS room unit cooler return)

1SWP*MOV172 - Motor-operated valve (HPCS room unit cooler supply)

1SWP*MOV504A - Motor-operated valve (SSW outlet valve from component cooling water) 21

1SWP*MOV510A - Motor-operated valve (SSW inlet valve to component cooling water)

The following SSW system equipment/functions have transfer and control switches located at Division III switchgear: 20

1SWP*P2C

The following SSW system equipment/functions have transfer and control switches located at the Division II remote shutdown panel:

1SWP*P2B - SSW pump

1SPW*P2D - SSW pump 11

1SWP*MOV96B - Motor-operated valve (isolate normal service water supply)

1SPW*MOV55B - Motor-operated valve (cooling tower inlet)

1E12*MOVF068B - Motor-operated valve (service water outlet from RHR heat exchanger) 20

1SWP*MOV74A - Motor-operated valve (HPCS room unit cooler outlet)

20 1SWP*MOV506A - Motor-operated valve (HPCS diesel generator heat exchanger outlet valve)

1SWP*MOV504B - Motor-operated valve (SSW outlet valve
21 from component cooling water)

1SWP*MOV510B - Motor-operated valve (SSW inlet valve to component cooling water)

See Fig. 7.3-11.

The following SSW system instrumentation is provided on the Division I and Division II remote shutdown panels:

11 1SWP*FI64A and FI64B - Flow indicators (RHR heat exchangers A and B)

Valve position and pump status indicators.

e. Containment Atmosphere Monitoring System

The following containment atmosphere monitoring system
11 instrumentation is provided on the Division I remote shutdown panel:

11 1CMS*TR103 - Recorder drywell pressure/temperature and suppression pool level/temperature

System	Parameter	Type of Readout	Range	Readout Location	RG 1.97 Item No.	Class 1E Power	
MS-PLCS	MS-PLCS steam line pressure	Meter	0-100 psig	MCR	NA	Yes	21
Containment Atmosphere Monitoring	Drywell pressure	Recorder	0-75 psia	MCR	B7, C8, D4	Yes	
	Containment pressure	Recorder	0-75 psia	MCR	B9, C10	Yes	
	Drywell atmosphere temperature	Recorder	40-440°F	MCR	D7	Yes	
	Containment atmosphere temperature	Recorder	0-200°F	MCR	NA	Yes	7
	Suppression pool level	Indicator & Recorder	(-) 18 to 0 to (+) 4 ft	MCR	C7, D5	Yes	20
	Suppression pool temperature	Recorder	0-200°F	MCR	A3, D6	Yes	
	Containment area gamma radiation	Recorder, CRT, & LED Display	$1\text{-}10^{8}$ R/hr	MCR	C5, E1, E2	Yes	20
	Drywell area gamma radiation	Recorder, CRT, & LED Display	$1\text{-}10^{8}$ R/hr	MCR	C5, E1	Yes	20
	Drywell unit cooler suction temperature	Indicator	0-200°F	MCR	NA	Yes	
	Containment atmosphere particulate radiation	Recorder, CRT, & LED Display	10^{-11} to 10^{-5} uCi/cc	MCR	NA	Yes	
	Containment atmosphere gaseous radiation	Recorder, CRT, & LED Display	10^{-7} to 10^{-1} uCi/cc	MCR	NA	Yes	

between the PSL and the LSSS equal to (as a minimum) instrumentation inaccuracies such as instrument inaccuracies, power supply effects, seismic effects, environmental effects (temperature, radiation, etc), and calibration effects.

17 3. Set points are chosen such that the LSSS is not exceeded, taking into account tolerances for drift and adjustability. Additional allowance to account for uncertainties in analysis is provided where possible.

(c) The LSSS takes into account environmental error allowances as required based on qualification testing and other sources of design data. Where worst case data is not
11 available conservative engineering estimates are used until verified data is obtained to validate or revise same. The present set points are based on qualification data and, therefore, no exceptions are taken at the present time.

(d) The qualification times for each piece of equipment are referenced or included in the Environmental Qualification Document (EQD). The EQD includes status and basis information and may be reviewed by the Staff at any time as required.

The response to this request for NSSS safety-related set points will be provided
21 through Gulf States Utilities participation in the Instrument Setpoint Methodology Group (ISMG) program.

QUESTION 421.021 (7.2)

The discussion on Scram Discharge Instrument Volume (SDIV) Water Level, FSAR Section 7.2.1.1, states that four pressure (level) transmitters sense SDIV level and provide inputs to the RPS. However, Section 4.6.1.1.2.4.2.5 states that both float sensing and pressure (level) sensing devices are used for the automatic scram function. Resolve this apparent discrepancy.

RESPONSE

The response to this request is provided in revised Sections 7.2.1.1, Item 2.h, 4.6.1.1.2.4.2.5 , and revised Figure 7.2-1. 11 21

QUESTION 421.004 (7.7)

If control systems are exposed to the environment resulting from the rupture of reactor coolant lines, steam lines or feedwater lines, the control systems may malfunction in a manner which would cause consequences to be more severe than assumed in safety analyses. I&E Information Notice 79-22 discusses certain non-safety grade or control equipment, which if subjected to the adverse environment of a high energy line break, could impact the safety analyses and the adequacy of the protection functions performed by the safety grade systems.

The staff is concerned that a similar potential may exist at light water facilities now under construction. You are, therefore, requested to perform a review per the I&E Information Notice 79-22 concern to determine what, if any, design changes or operator actions would be necessary to assure that high energy line breaks will not cause control system failures to complicate the event beyond the FSAR analysis. Provide the results of your review including all identified problems and the manner in which you have resolved them.

The specific "scenarios" discussed in the above referenced Information Notice are to be considered as examples of the kinds of interactions which might occur. Your review should consider analogous interactions as relevant to the BWR design.

This item was addressed in the April 16, 1981 letter from R. Tedesco to E. L. Draper.

RESPONSE

A review of River Bend Station control systems has been performed in accordance with IE Information Notice 79-22. The results of this review were provided to the NRC Staff under separate cover (RBG-20,164 dated February 15, 1985, and RBG-20,969 dated May 10, 1985). 11 21

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4) Provide justification that any simultaneous malfunctions of the control systems identified in (2) and (3) resulting from failures or malfunctions of the applicable common power source or sensor are bounded by the analyses in Chapter 15 and would not require action or response beyond the capability of operators or safety systems.

This item was addressed in the April 16, 1981, letter from R. Tedesco (NRC) to E. L. Draper (GSU).

RESPONSE

A review of River Bend Station control systems has been
performed. The results of this review have been provided to 21
the Staff under separate cover (reference: RBG-19,488 dated 11
November 21, 1984). The methodology used for this study is similar to that of other BWRs, and is consistent with the guidance provided by the NRC Staff.

also be reached by manual hose stations located in adjoining buildings. 11

6. The reactor building drywell area. Detailed information is provided in Section 9A.2.2.3. 19

Standpipes for two or more hose stations are 4 inch. Reduction to 2 1/2 inch is made at the station and to the last station on a system. Hose stations are equipped with a minimum of 75 feet and a maximum of 150 feet of 1 1/2 inch synthetic or cotton-jacketed, lined hose. Nozzles are 11 provided commensurate with the hazard protected. Systems are designed using the guidance from NFPA Standard No. 14 16 requirements. Hose rack stations with in excess of 75 ft of hose are listed in Table 9A.3-4. 19

A seismically qualified QA Category I, standby service water (SWP) supply is available to manual hose stations located in 16 the auxiliary, control, fuel, and reactor buildings. Piping for these hose stations is analyzed for SSE loading and provided with supports to assure system pressure integrity. The SWP supply is obtained by manual operator opening of 21 valves. The cross connections are capable of providing flow to at least two hose stations in any building and do not degrade the performance of the Seismic Category I SWP supply 21 system.

plant can be safely brought to rated power and sustain power operation.

14.2.2 Organization and Staffing

The River Bend Station startup organization is shown in Fig. 14.2-1 and is as discussed in the the following sections.

14.2.2.1 GSU Startup and Test Department

The GSU Startup and Test Department has overall responsibility for control and conduct of the test program during the preliminary, preoperational, and initial startup phases. The Startup and Test Department's efforts are Plant directed by the Superintendent-Startup and Test, who reports directly to the ~~Project~~ Manager. The SWEC Preliminary Test Organization (PTO) has been delegated to perform the 13 majority of preliminary testing. The PTO's efforts are directed by the SWEC Project Manager-Preliminary Test, who reports directly to the SWEC Project Manager. The GE Site Operations Manager, as Senior Startup Representative for GE onsite, serves on the Superintendent-Startup and Test staff to provide NSSS vendor advice and technical direction. The GSU Startup and Test Department and the SWEC Preliminary Test Organization conduct the test program in conformance with the River Bend Startup Manual and related documents associated with accomplishing the test program objectives.

The Startup and Test Department is divided into two internal groups: the Preoperational Test Group responsible for all matters relating to preliminary, preoperational, and acceptance testing, and the Startup Test Group responsible for all matters relating to initial startup testing. Both groups consist of personnel drawn from various organizations such as GSU, the River Bend Station staff, SWEC, GE, and outside consultants.

The Preoperational Test Group consists of three Preoperational Test Supervisors (NSSS, BOP, electrical) each of whom reports directly to the Superintendent-Startup and Test. Preoperational Test Engineers are assigned to this group and report directly to one of the supervisors. The 13 Startup Test Group consists of a Startup Supervisor who reports directly to the Superintendent-Startup and Test and four Shift Test Directors, each of whom reports directly to the Startup Supervisor. Startup Test Engineers are assigned to this group and report to the Shift Test Directors. The Shift Test Directors and their assigned Startup Test Engineers comprise the shift complements necessary during

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Initial startup test procedures are developed by the responsible startup test engineers. Each test procedure is prepared using pertinent reference material such as test specifications provided by GE, safety analysis report, technical specifications, and applicable regulatory guides.

Upon completion of the initial procedure draft, the preparer forwards it to the Startup Supervisor and the Startup, Test, 13
Design, and Analysis Lead Engineer, who review and comment on it. Following the resolution of comments with the preparer, an acceptable procedure draft is submitted to the following people for review: Superintendent Startup and Test, GE Operations Manager, Plant ~~Manager~~ Staff Representative, and Operational 13
Quality Assurance Supervisor. The preparer resolves comments generated by the review and issues a revised procedure draft to the same people for a second review. Following the resolution of any additional comments, the procedure is submitted to an augmented FRC for final review, approval, and distribution. The augmented FRC is comprised of the normal FRC members, the Superintendent Startup and Test, and the GE Operations Manager.

14.2.4 Conduct of Test Program

14.2.4.1 Conduct of Preoperational Phase Testing

Preoperational phase testing commences after preliminary testing on individual components, systems, and subsystems is complete. Testing is performed by the preoperational test group under the administrative controls established in the River Bend Station Startup Manual. Testing is performed in strict adherence to approved written test procedures. Test procedures and the Startup Manual are controlled documents.

Changes to approved preoperational test procedures are in conformance with the controls established in the Startup Manual. If the functional or technical intent of the procedure is not altered by minor or obvious changes, the cognizant preoperational test engineer may make on-the-spot handwritten changes. Such changes are documented on the minor modification page of the procedure, and are approved by the responsible Preoperational Test Supervisor or his 13
designated alternate within 1 week.