GULF STATES UTILITIES COMPANY

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

AREA CODE 504 635-6094 346-8651

July 8, 1985
RBG- 21,471
File No. 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) Chapter 3. Enclosure 1 provides a discussion of each of these revisions including their effect, if any, on the Safety Evaluation Report and the proposed Technical Specifications. These revisions 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. Table 3.2-1 has been revised to reflect recent discussions with the Mechanical Engineering Branch regarding the ASME certification of various standby diesel generator components. This revision may require revision of the SER; however, no revision is expected to be necessary for the proposed Technical Specifications.

B. Page 3.8-59 now includes in the list of codes and standards used NCIG-01, Rev. 2. This standard provides weld visual acceptance criteria used in the structural design of concrete and steel components at River Bend Station. No impact is expected from this change on either the SER or the proposed Technical Specifications.

C. Table 3.9A-3, Page 3 of 4 has been revised to eliminate SRV loading from the load combination involving the pool swell case from a DBA. The effects of a stuck open SRV which precedes a DBA become insignificant when compared with pool swell. Also, the DBA phenomena with pool swell is derived from the total possible energy release from the Reactor Vessel and, therefore, no additional energy can be added by including an SRV load. This revision may impact the SER discussion beginning on Page 3-36, but is not expected to impact the proposed Technical Specifications.

D. Table 3.9A-5 has been updated to reflect completion of final program reviews. No impact is expected on either the SER or the proposed Technical Specifications.

E. Table 3.9A-11 has been updated to reflect current design status of active valves. While this revision may affect the SER discussion on Page 3-45, but no impact is expected on the proposed Technical Specifications.

F. Table 3.9A-10 has been revised to reflect the addition of new active pumps which have recently been included in the plant design. No impact is expected to either the SER or the proposed Technical Specifications.

G. Page 3.9A-24a has been revised and new Table 3.9A-22 has been added as identified in Regulatory Guide 1.84 to show the application of ASME Code Case N-318. No impact is expected on either the SER or the proposed Technical Specifications.

H. The response to Question 210.92 has been updated to reflect as-built information. No impact is expected on either the SER or the proposed Technical Specifications.

I. Various question responses have been updated to reflect previous transmittals. No impact is expected for either the SER or the proposed Technical Specifications.

TABLE 3.2-1 (Cont)

	Safety[1] Class	Seismic[2] Category	Quality[3] Assurance Category	Tornado[4] Protection Designation	Location[5]	Scope[6] of Supply	Design[7] Detail	Notes
8. Piping, containment isolation	2	I	B	E	C,A	P	S	
9. Valves, containment isolation	2	I	B	E	C,A	P	V	
XXV. Normal Service Water System								
1. Pumps	NNS	NA	S	N	O	P	V	
2. Pump Motors	NNS	NA	S	N	O	P	V	
3. Valves, isolation from standby service water	3	I	B	E	A,R,S	P	V	
4. Piping, isolation from standby service water	3	I	B	E	A,R,S	P	S	
5. Piping, other	NNS	NA	S	E,N	A,O,R,S	P	S	
6. Valves, other	NNS	NA	S	E,N	A,O,R,S	P	V	
7. Other equipment	NNS	NA	S	E,N	A,O,R,S	P	V	
XXVI. Instrument and Service Air Systems								(31) |7
1. Vessels, accumulators, supporting safety-related systems	3	I	B	E	A,C,D,S	P	S	(19)
2. Piping in lines between accumulators and safety-related systems	3	I	B	E	A,C,D,S	P	S	(19)
3. Valves in lines between accumulators and safety-related systems	3	I	B	E	A,C,D,S	P	V	(19)
4. Piping, containment isolation	2	I	B	E	A,C,D	P	S	
5. Valves, containment isolation	2	I	B	E	A,C,D	P	V	
6. Electrical modules with safety function	2	I	B	E	A,C,D,R	P	S	(19)
7. Cables with safety function	2	NA	B	E	-	P	S	(19)
8. Piping, other	NNS	NA	B	E,N	M	P	S	
9. Valves, other	NNS	NA	B	E,N	M	P	V	
10. Other equipment	NNS	NA	B	E,N	M	P	V	
XXVII. Diesel Generator Systems								(44) |21
1. Diesel-generators								
a. HPCS diesel-generator	2	I	B	E	S	GE	V	
b. Standby diesel-generator	3	I	B	E	S	P	V	
2. Electrical modules with safety functions (including the governor, voltage regulator, and exciter systems)								7 (34) |13
a. HPCS diesel-generator	2	I	B	E	R,S	GE	GE	
b. Standby diesel-generator	3	I	B	E	A,R,S	P	V	

TABLE 3.2-1 (Cont)

(42) Piping is seismically supported from the outermost isolation valve to and including the main turbine stop and control valve. 20

(43) Piping is seismically supported from the outermost isolation valve to and including the anchor at the turbine building/auxiliary building interface.

(44) For the standby diesel generators, 1EGS*EG1A and 1EGS*EG1B, some components supplied meet earlier editions and addenda of the ASME Section III Code than were applicable at the date the purchase orders were awarded to the subsuppliers. See Note 4 of Regulatory Guide 1.26 position in Table 1.8-1. 21

AISC 1969	American Institute of Steel Construction - Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, dated February 12, 1969, including Supplements 1, 2, and 3 dated Nov. 1, 1970, Dec. 8, 1971, and June 12, 1974	16
AISC 1978	American Institute of Steel Construction - Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, dated November 1, 1978, Section 1.5.2	16
AISC 1972	Code of Standard Practice for Buildings and Bridges - AISC Manual	
AWS D1.1-75	American Welding Society - Structural Welding Code (Exceptions to this code are listed in Section 3.8.4.6.)	2
NCIG-01 Rev. 2	Nuclear Construction Issues Group, Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants, May 7, 1985	21
AWS D12.1-75	American Welding Society Recommended Practice for Welding Reinforcing Steel Metal Inserts, and Connections in Reinforced Concrete Construction	

U.S. Department of Labor, Occupational Safety and Health Administration. Occupational Safety and Health Standards, October 18, 1972.

Southern Standard Building Code, 1969 (including revisions up to 1972).

Louisiana Building Codes, as required.

The following is a summary of the principal plant structural specification that is prepared for procurement, fabrication, installation, and placement of components and materials for seismic Category I structures. This summary also includes the reference to the appropriate American Society for Testing and Materials specification used in procurement and testing of materials for seismic Category I structures, as applicable, and exceptions and deviations from the codes and standards, if any. The current editions of the ASTM standards adopted by the vendors' fabricating facilities at

by Portions A, B, and E, such as the remaining portions of the integral attachment, components, frames, base plates, and all welds that connect these elements to the next load-carrying element in the load path to the building structure. 7

4. Paragraph NF 1131.5, Portion E is defined as the load-carrying building structure. This is considered to be the building structure and all elements in it such as expansion bolts, concrete inserts, and supplementary steel.

When the pipe support assembly is considered to be under both ASME III and non-ASME III jurisdiction, the interpretation of jurisdictional boundaries (so called alternate jurisdictional boundaries) is as follows:

1. The alternate jurisdictional boundaries for NF applications extend from the ASME III pipe transmitting loads to the first structural members or component standard supports and include welds attaching these NF-members or component standard supports to other non-NF members such as structural steel, supporting frames, base plates or embedment plates, etc.

2. The definitions of integral attachments and pressure-retaining components are the same as those described in the interpretation of those supports which fall within ASME III jurisdiction only. 21

When supports are designed utilizing alternate jurisdictional boundary criteria, the non-NF members and non-NF welds are designed to meet allowable stress limitations of both ASME III code and AISC specification. When the design is based on the AISC specification, it includes all the load conditions required for ASME III design (see Table 3.9A-13 for load conditions). However, for load conditions 3, 4, and 5, the allowable stress values used for load conditions 1 and 2 are increased by one-third.

When integral attachments are used, local pipe stresses are checked and connection welds are designed in accordance with Subsections NB, NC, and ND of ASME Section III. An alternate procedure for the evaluation of the design for hollow circular cross section welded attachments on Class 2 and 3 piping will be in accordance to Code Case N-392. 17 For the design of rectangular cross section attachments on Class 2 or 3 piping, Code Case N-318 may be used and a listing of applications is given in Table 3.9A-22. 21

TABLE 3.9A-3 (Cont)

IBA = Maximum inertia load of annulus pressurization caused by a feedwater line break (AP FWB), a main steam break
DBA (AP MSB), or a recirculation line break (AP RCB). The feedwater line break is an IBA and causes no bulk pool
AP Max swell. 15

Notes for Tables 3.9A-2 and 3.9A-3:

(1) The SRV, SBA, IBA, and DBA load cases (the columns between Fluid Trans and Jet Imp) occur in the reactor building only. Except for AP, they are suppression pool-related dynamic events. Piping inside or attached to the reactor building is affected by the reactor building vibrations up to the first anchor outside the building.

(2) Dynamic loads are combined by the square root sum of the squares method (SRSS). 9 15

When OBEI and OBEA are combined, it is by absolute summation. Both OBEI and (OBEI + OBEA) are considered dynamic loads. 9

(3) (a) All piping (including quenchers, quencher struts, and all supports) submerged in the suppression pool experiences, in addition to inertia loads, the following drag or pressure loads:

OBE or SSE sloshing, SRV Max bubble, CO, Chug, DBA bubble formation, bulk swell. 15

During the pool swell load case, the associated drag loads are only combined with SSE, fluid transient, and bubble formation inertia loads. In the fallback case, the same load combination applies, except use fallback drag load, and replace bubble formation inertia loads with CO inertia loads. 21

(b) Piping in the suppression pool which is located in the vicinity of the RHR relief valve discharge line experiences RHR discahrge drag loads. These are RHR water jet, RHR bubble, and RHR CO (bounding RHR Chug), all occurring consecutively. In addition to these load RHR loads, only the two RHR steam discharge lines experience lateral loads during RHR chugging. RHR Max drag, the envelope of these loads, occurs simultaneously with OBE under emergency conditions, and with SSE under faulted conditions.

(c) An inactive quencher assembly (including struts and submerged portion of SRV discharge line) experiences all the direct loads applicable to components in the suppression pool simultaneously with inertia loads. The lateral loads associated with Chug and CO are insignificant. Drywell vent clearing water jet loads not bounded by pool swell bubble loads during DBA are experienced only by the quencher support struts. This drag occurs simultaneously with SSE and SRV Max. An active quencher assembly experiences only flow transient and air/water clearing loads associated with its own discharge simultaneously with inertia loads. The air/water clearing loads consist of a water expulsion transient and hydrodynamic loads applied to the quencher arms. A detailed description of quencher load application is given in Section A.6A.7. 15

(e) Piping above the water level of the suppression pool experiences pool swell impact loads upward and fallback drag loads. Piping between el 108 ft and el 109 ft experiences transition impact and drag loads, and piping between el 109 ft and el 120 ft experiences froth impact loads bounding the ensuing froth drag loads. 21

During the pool swell case, the bulk impact, froth impact, and drag loads are only combined with SSE, fluid transient, bubble formation inertia loads, and jet impingement loads. In the fallback case, the same load combination applies, except use fallback drag loads and replace bubble formation inertia loads with CO inertia loads. 21

TABLE 3.9A-5 (Cont)

Equipment	Method	Results	
Miscellaneous HVAC Centrifugal and Vaneaxial Fans Unit Coolers Air Conditioning Units Air Blowers	Qualification is performed by static analysis. Applicable codes, standards, and regulatory guides include AISC; NRC Regulatory Guides 1.61 and 1.92; and IEEE 323-1974, 334-1974, and 344-1975.	Some of this equipment is subject to seismic loads only, and the remainder to seismic plus hydrodynamic loads. The results of the analysis of structural and functional elements of the equipment indicates the stresses were within the allowable limits of 3.9.2.2.2A. The equipment was determined to be rigid and deflection of rotating members was determined to be well within the clearances. For the fans affected by seismic and hydrodynamic loads, a fatigue analysis was also performed. The cumulative usage factor was calculated to be less than unity. A minimum margin of safety of 3.5 was achieved for hold-down bolts and weld stresses. The results of the analysis for the unit coolers in the containment, which are subject to seismic plus hydrodynamic loads, show that the stresses are within the allowable stress limits of paragraph 3.9.2.2.2A and the minimum margin of safety is 50 percent. A fatigue analysis shows that the usage factor for the coil section is less than unity. The qualification of electrical motors for this equipment can be found in Table 3.10A-1.	19
Flexible Metal Hoses	Flexible metal hoses are qualified by a combination of analyses and tests. Applicable standards and guidelines are EJMA; ASME Code Section III; ASME Code Case N-192-2; IEEE 344-1975; and NRC Regulatory Guides 1.61, 1.92, and 1.100.	Flexible hoses are affected by both seismic and hydrodynamic loads. Design adequacy was verified by analysis in accordance with the EJMA Standard. This analysis takes into account design temperature, pressure, dynamic loads, differential displacements, and the number of cycles of displacement. In addition, representative hoses are qualified by two separate dynamic test programs. In the first dynamic test, hoses are subjected to a total of 1 million cycles of vibrations in the frequency range of 5 to 200 Hz, at accelerations ranging from 3 g to 51 g. In the second test, the hoses are subjected to six biaxial, random, multifrequency input motions of 30-sec durations each. The six tests are repeated in the other horizontal orientations. The TRS envelop the applicable portion of RRS with at least a 10-percent margin. Hoses were pressurized at the start of each test series to at least the design pressure. During and following the dynamic tests the hoses maintained their pressure integrity.	12
Nonactive Valves Motor Operated	Nonactive valves are qualified by analysis. Applicable standards	Valves affected by seismic loads only are qualified for 3 g horizontal and 3 g vertical loadings. Those	21

TABLE 3.9A-5 (Cont)

Equipment	Method	Results	
Active Valves Motor-Operated Air-Operated Solenoid SRV	Active valves are qualified by analysis and test. Applicable standards and guidelines are ASME Section III; NRC Regulatory Guides 1.48, 1.61, 1.89, 1.92, and 1.100; and IEEE Stds 323-1974, 344-1975, and 382-1972.	Valves affected by seismic loads only are qualified for 3 g horizontal and 3 g vertical loadings. The majority valves affected by seismic and hydrodynamic loads are qualified for up to 9 g horizontal and 9 g vertical loadings. Piping design acceptance criteria ensure actual loadings to be within the qualified levels for each valve.	19 20
		All valves are determined to have natural frequencies above 33 Hz. Structural and pressure integrity of the valve assemblies are demonstrated by static analysis. Stresses are maintained within the limits of Table 3.9A-9. Deflection of critical components is determined to be well within the allowable limits. Design stress analyses are performed for ASME Class 1 valves in accordance with ASME Section III, Subsection NB-3500. For valves affected by hydrodynamic loads, fatigue analyses are also performed. Cumulative usage factors are maintained below unity.	
		Electric components of the valves such as solenoid valves, motor operators, limit switches, etc, are qualified by comprehensive environmental and dynamic test programs. Detailed results are provided in Table 3.10A-1.	12
		Operability of the valve assemblies is demonstrated by both dynamic and static load tests. Selected valves are subjected to dynamic tests to simulate the seismic and hydrodynamic loads. Other valves are qualified through static deflection tests of parent valve assemblies. The test programs conform to paragraph 3.9.3.2.2A. Functional adequacy is verified during and after these tests.	21
Monorail System	Dynamic analyses of monorail systems (i.e., trambeams) are performed utilizing response spectrum modal technique. Applicable standards and guidelines are AISC Code, NRC Regulatory Guides 1.61 and 1.92.	Some of the trambeams are affected by seismic loads only. Others are affected by both seismic and hydrodynamic loads. The safety function of the trambeam is to maintain its structural integrity. Dynamic responses of all vital components, i.e., tracks, hangers, wheels, carrier, hoist, tractor drive, and restraints, are calculated. Stresses in members, connections, and welds of the critical components are found to be within the allowables of paragraph 3.9.2.2.2A. For the trambeams subjected to hydrodynamic loads, adequacy of the structural components	

TABLE 3.9A-10 (Cont)

System Name	Equipment Name	Equipment No	Equipment Size (Hp)	Manufacturer	ASME Section III Code Class	Active Function	
Standby Service Water	Control bldg. chiller recirc pumps	1SWP*P3A-D	15	Goulds Pumps	3	Temperature control of control bldg. chiller condenser	12
Diesel Generator Systems (Fuel Oil Storage and Transfer)	Standby diesel generator fuel oil transfer pumps	1EGP*P1A 1EGP*P1B 1EGP*P1C	3	Crane Deming Pump Div., Crane Co.	3	Supply diesel generator fuel oil to day tank for diesel generator	
Reactor Building Floor Drains (Suppression Pool Pumpback Mode)	Reactor bldg floor drains sump pumps	1DFP*P5A,B,D,E	3	Goulds Pumps	NA(1)	Returns ECCS leakage to the suppression pool lost as a result of a post-LOCA passive failure.	21

(1) Pumps are designed and built to manufacturer's standards and are seismically analyzed.

TABLE 3.9A-11

ACTIVE VALVES (BOP)

System Name	Mark Number	Size	Valve Type	Pressure Rating(60)	ASME Class	Mfr.	Valve Operator	Active Function	
Nuclear boiler system turbine drains (B21)	1B21*MOVF016	3	Gate-MO	600	1	1	SB-00-10(1)	27	
	1B21*MOVF019	3	Gate-MO	600	1	1	SB-00-10(1)	27	
	1B21*MOVF067A,B,C,D	1 1/2	Globe-MO	1500	1	1	SMB-000-5(1)	27	
Main steam-positive leakage control (B21)	1B21*MOVF027A,B,C,D	3/4	Globe-MO	1500	2	1	SMC-04-2(1)	1	
	1B21*MOVF085	3	Gate-MO	600	2	1	SMB-00-10(1)	27	20
Nuclear boiler system feedwater (B21)	1B21*MOVF098A,B,C,D	24	Gate-MO	900	2	1	SMB-4-250(1)	1, 2	
	1B21*MOVF065A,B	20	Gate-MO	900	2	1	SMB-4-250(1)	27	
Residual Heat Removal (RHR) (E12) (RHS)	1E12*MOVF008	18	Gate-MO	600	1	1	SB-2-60(1)	27	
	1E12*MOVF009	18	Gate-MO	600	1	1	SB-2-60(1)	27	
	1E12*MOVF011A,B	4	Globe-MO	300	2	1	SMB-000-5(1)	27	
	1E12*MOVF021	14	Globe-MO	300	2		SMB-3-60(1)	27	
	1E12*MOVF023	4	Globe-MO	900	1	1	SB-005-5(1)	4	
	1E12*MOVF024A,B	14	Gate-MO	300	2	1	SMB-1-60(1)	27	
	1E12*MOVF026A,B	4	Gate-MO	300	2	1	SMB-00-10(1)	5	
	1E12*MOVF027A,B	10	Gate-MO	300	2	1	SMB-0-40(1)	27	
	1E12*MOVF037A,B	10	Globe-MO	300	2	1	SMB-1-25(1)	6	12
	1E12*MOVF040	6	Globe-MO	300	2	1	SMB-005-10(1)	7	
	1E12*MOVF042A,B,C	10	Gate-MO	600	1	1	SB-2-60(1)	26	
	1E12*MOVF049	6	Gate-MO	300	2	1	SB-005-15(1)	7	
	1E12*MOVF052A,B	8	Globe-MO	900	2	1	SMB-2-40(1)	5	
	1E12*MOVF053A,B	10	Globe-MO	900	2	1	SMB-2-40(1)	8	
	1E12*MOVF064A,B,C,D	4	Gate-MO	300	2	1	SB-005-10(1)	27	
	1E12*MOVF087A,B	8	Globe-MO	900	2	1	SMB-2-40(1)	9	
	1E12*MOVF068A,B	18	Butterfly	150	3	3	SMB-00-7.5(1)	28	
	1E12*MOV105	20	Gate	150	2	1	SMB-0-25(1)	27	21
	1E12*AOVF098	10	Testable Check	300	2	4	(3)	29	
	1E12*SOVF075A,B	3/4	Y pattern	300	2	6	Model 77KK-001(4)	7	
	1E12*SOVF095	3/4	Y pattern	300	2	6	Model 77KK-001(4)	30	
	1E12*SOVF060A,B	3/4	Y pattern	300	2	6	Model 77KK-001(4)	7	
	1E12*AOVF041A,B	10	Check	600	1	4	(3)	31	
	1E12*AOVF041C	10	Check	600	1	4	(3)	27	
	1E12*RVF005	3/4x1	SRV	300/150	2	8	None	59	
	1E12*RVF017A	3/4x1	SRV	300/150	2	8	None	59	
	1E12*RVF017B	3/4x1	SRV	300/150	2	8	None	59	
	1E12*RVF025A	1 1/2x2	SRV	300/150	2	8	None	59	

TABLE 3.9A-11 (Cont)

System Name	Mark Number	Size	Valve Type	Pressure Rating(40)	ASME Class	Mfr.	Valve Operator	Active Function	
	1E51*MOVF019	2	Globe-MO	150	2	1	SMB-00-10(1)	34	
	1E51*MOVF077	1 1/2	Globe-MO	600	2	1	SMB-000-2(1)	27	
	1E51*MOVF078	2 1/2	Globe-MO	150	2	1	SMB-000-2(1)	27	
	1E51*AOVF066	6	Check	900	1	4	(3)	31	
	1E51*AOVF065	6	Check	900	1	4	(3)	27	
	1E51*AOVF004	1	Globe	150	2	7	Model 667NS-ES(4)	35	
	1E51*AOVF005	1	Globe	150	2	7	Model 667NS-ES(4)	35	
	1E51*AOVF025	1	Globe	1500	2	7	Model 667NS-DBQNS(4)	36	
	1E51*AOVF026	1	Globe	1500	2	7	Model 667NS-DBQNS(4)	36	
	1E51*AOVF054	1	Globe	1500	2	7	Model 667NS-DBQNS(4)	37	
	1E51*PCVF015	1	Globe	900	2	6	Model 71010-5(4)	60	21
	1E51*RVF017	3/4x1	SRV	150/150	2	8	None	59	
	1E51*RVF018	1 1/2x 2 1/2	SRV	150/150	2	8	None	59	
	1E51*RVF090	3/4x1	SRV	1500/150	2	8	None	59	
	1ICS*RV130	3/4x1	SRV	1500/150	2	8	None	59	
Fire protection water (FPW)	1FPW*MOV121	6	Gate-MO	150	2	1	SMB-00-10(1)	27	
	1FPW*MOV122	6	Gate-MO	150	2	1	SMB-00-10(1)	14	
Feedwater (FWS)	1FWS*MOV7A,B	20	Gate-MO	900	2	1	SMB-4-200(1)	27	
Reactor water cleanup (G33) (WCS)	1G33*MOVF001	6	Gate-MO	600	1	1	SB-1-40(1)	27	
	1G33*MOVF004	6	Gate-MO	600	1	1	SB-1-40(1)	27	12
	1G33*MOVF028	4	Gate-MO	600	2	1	SB-005-10(1)	27	
	1G33*MOVF034	4	Gate-MO	600	2	1	SB-005-10(1)	27	
	1G33*MOVF039	6	Gate-MO	900	2	1	SB-0-25(1)	27	
	1G33*MOVF040	6	Gate-MO	900	2	1	SB-0-25(1)	27	
	1G33*MOVF053	4	Gate-MO	900	2	1	SB-005-10(1)	27	
	1G33*MOVF054	4	Gate-MO	900	2	1	SB-005-10(1)	27	
	1G33*SOVF041	3/4	Y Pattern	900	3	6	Model 77KK-001(4)	30	
	1WCS*RV144	3/4x1	SRV	1500/150	2	8	None	59	
	1WCS*RV154	3/4x1	SRV	150/150	2	8	None	59	
	1WCS*MOV111	4	Gate-MO	600	2	1	SMB-0-7 1/2(1)	14	
	1WCS*MOV172	2 1/2	Gate-MO	150	2	1	SMB-000-5(1)	27	
	1WCS*MOV173	2 1/2	Gate-MO	150	2	1	SMB-00-5(1)	14	
	1WCS*MOV178	2 1/2	Gate-MO	150	2	1	SMB-000-5(1)	27	
Diesel Generator Fuel Oil Storage and Transfer System (EGF)	1EGF*PCV25A,B	3/4	Y Pattern	900	3	6	Model 77KK-007(4)	33	
Reactor plant component cooling (CCP)	1CCP*MOV138	10	Gate-MO	150	2	1	SMB-0-25(1)	27	
	1CCP*MOV158	10	Gate-MO	150	2	1	SMB-0-25(1)	27	
	1CCP*MOV159	10	Gate-MO	150	2	1	SMB-0-25(1)	27	

TABLE 3.9A-11 (Cont)

System Name	Mark Number	Size	Valve Type	Pressure Rating(40)	ASME Class	Mfr.	Valve Operator	Active Function	
	1CCP*MOV163	2	Globe-MO	600	3	1	SMB-000-2(1)	2	
	1CCP*MOV169	2	Globe-MO	600	3	1	SMB-000-5(1)	2, 3	
	1CCP*MOV129	12	Butterfly	150	3	3	SMB-000-5(1)	2, 3	
	1CCP*MOV335	12	Butterfly	150	3	3	SMB-000-5(1)	2, 3	
	1CCP*MOV336	12	Butterfly	150	3	3	SMB-0005(1)	2, 3	
	1CCP*MOV130	12	Butterfly	150	3	3	SMB-000-5(1)	2, 3	
	1CCP*MOV16A, B	12	Butterfly	150	3	3	SMB-000-5(1)	2, 3	
	1CCP*MOV143	6	Butterfly	150	2	3	SMB-000-2(1)	31	
	1CCP*MOV142	6	Butterfly	150	2	3	SMB-000-2(1)	31	
	1CCP*MOV144	6	Butterfly	150	2	3	SMB-000-2(1)	31	21
	1CCP*RV151	3/4x1	SRV	150/150	2	8	None	59	
	1CCP*RV155	3/4x1	SRV	150/150	2	8	None	59	
	1CCP*RV57A	3/4x1	SRV	150/150	3	8	None	59	
	1CCP*RV57B	3/4x1	SRV	150/150	3	8	None	59	
	1CCP*RV60A	3/4x1	SRV	150/150	3	8	None	59	
	1CCP*RV60B	3/4x1	SRV	150/150	3	8	None	59	
Combustible gas control-containment hydrogen purge (CPP)	1CPP*MOV104	3	Gate-MO	150	2	1	SMB-000-5(1)	38	
	1CPP*MOV105	3	Gate-MO	150	2	1	SMB-000-5(1)	38	
	1CPP*SOV140	1	Y Pattern	150	2	6	Model 77KK-004(4)	39	
CRD hydraulic control rod drive (C11)	1C11*MOVP083	2	Globe-MO	1500	2	1	SMB-000-5(1)	27	12
Control building chilled water (HVK) (LSV)	1HVK*MOV10A,B	2	Globe-MO	600	3	1	SMB-000-2(1)	3	
	1HVK*MOV11A,B	2	Globe-MO	600	3	1	SMB-000-2(1)	3	
	1HVK*MOV20A,B,C,D	6	Butterfly	150	3	3	SMB-000-2(1)	40	
	1HVK*TV16A,B	4	Globe	150	3	5	Model 85550(5)	41	
	1HVK*TV17A,B	4	Globe	150	3	5	Model 85550(5)	41	
	1HVK*TV18A,B	4	Globe	150	3	5	Model 85550(5)	41	
	1HVK*RV45A	2x3	SRV	150/150	3	8	None	59	
	1HVK*RV45B	2x3	SRV	150/150	3	8	None	59	21
Ventilation chilled water (HVN)	1HVN*MOV22A,B	6	Gate-MO	150	3	1	SMB-00-10(1)	27	
	1HVN*MOV102	8	Gate-MO	150	2	1	SMB-00-15(1)	2	
	1HVN*MOV127	8	Gate-MO	150	2	1	SMB-00-15(1)	27	
	1HVN*MOV128	8	Gate-MO	150	2	1	SMB-00-15(1)	27	
	1HVN*MOV129	8	Gate-MO	150	2	1	SMB-00-15(1)	14	

TABLE 3.9A-1 (Cont)

System Name	Mark Number	Size	Valve Type	Pressure Rating(60)	ASME Class	Mfr.	Valve Operator	Active Function	
	1SWP*MOV61A,B	30	Butterfly	150	3	3	SMB-00-15(1)	43	
	1SWP*MOV55A,B	30	Butterfly	150	3	3	SMB-00-15(1)	43	
	1SWP*PVX32A,B,C,D	3	Globe	150	3	5	Model 85560(5)	33	
	1SWP*PVY32A,B,C,D	3	Globe	150	3	5	Model 85820(5)	33	
	1SWP*AOV51A,B	1	Globe	150	3	7	Model 657NS-BS(6)	45	
	1SWP*MOV511A	18	Butterfly	150	3	3	SMB-00-7.5(1)	46	
	1SWP*MOV171	8	Butterfly	150	3	3	SMB-000-2(1)	47	
	1SWP*MOV172	8	Butterfly	150	3	3	SMB-000-2(1)	47	
	1SWP*MOV511B	18	Butterfly	150	3	3	SMB-00-7.5(1)	46	
	1SWP*MOV501A	13	Butterfly	150	3	3	SMB-00-7.5(1)	46	
	1SWP*MOV173	8	Butterfly	150	3	3	SMB-00-2(1)	47	
	1SWP*MOV174	8	Butterfly	150	3	3	SMB-00-2(1)	47	
	1SWP*MOV501P	18	Butterfly	150	3	3	SMB-00-7.5(1)	46	
	1SWP*MOV40A,B,C,D	18	Butterfly	150	3	3	SMB-00-7.5(1)	48	12
	1SWP*MOV505A,B	30	Butterfly	150	3	3	SMB-00-15(1)	48	
	1SWP*MOV77A,B	8	Butterfly	150	3	3	SMB-000-2(1)	49	
	1SWP*MOV57A,B	30	Butterfly	150	3	3	SMB-00-15(1)	50	
	1SWP*MOV96A,B	30	Butterfly	150	3	3	SMB-00-15(1)	50	
	1SWP*MOV506A,B	8	Butterfly	150	3	3	SMB-000-2(1)	49	
	1SWP*RV119	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV133	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV49A	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV49B	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV79A	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV79B	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV91A	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV91B	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV91C	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV91D	3/4x1	SRV	150/150	3	8	None	59	
	1SWP*RV140	3/4x1	SRV	150/150	2	8	None	59	
	1SWP*SOV522A	1	Globe	150	2	6	1025010-6(4)	61	
	1SWP*SOV522B	1	Globe	150	2	6	1025010-6(4)	61	
	1SWP*SOV522C	1	Globe	150	2	6	1025010-6(4)	61	
	1SWP*SOV522D	1	Globe	150	2	6	1025010-6(4)	61	
	1SWP*SOV523A	3/4	Y Pattern	150	2	6	Model 77KK-006(4)	61	
	1SWP*SOV523B	3/4	Y Pattern	150	2	6	Model 77KK-006(4)	61	21
	1SWP*SOV523C	3/4	Y Pattern	150	2	6	Model 77KK-006(4)	61	
	1SWP*SOV523D	3/4	Y Pattern	150	2	6	Model 77KK-006(4)	61	
	1SWP*SOV552A	3/4	Globe	150	3	6	1025010-6(4)	61	
	1SWP*SOV552B	3/4	Globe	150	3	6	1025010-6(4)	61	
	1SWP*MOV190	1	Globe	600	3	1	SMC-04-3(1)	19	
Control building air conditioner (HVC)	1HVC*MOV1A,B	24	Butterfly	150	3	2	SMB-000-2(1)	51	12

TABLE 3.9A-[illegible] (Cont)

System Name	Mark Number	Size	Valve Type	Pressure Rating(**)	ASME Class	Mfr.	Valve Operator	Active Function
Containment and drywell ventilation and purge, annulus mixing and pressure control, and auxiliary building ventilation (reactor plant ventilation) (HVR)	1HVR*AOV126	24	Butterfly	150	2	2	33072-SR-80(z)	31
	1HVR*AOV128	36	Butterfly	150	2	2	33122-SR-80(z)	27
	1HVR*AOV123	36	Butterfly	150	2	2	33122-SR-80(z)	27
	1HVR*AOV125	24	Butterfly	150	2	2	33072-SR-80(z)	31
	1HVR*AOV147	24	Butterfly	150	2	2	33072-SR-80(z)	31
	1HVR*AOV148	24	Butterfly	150	2	2	33072-SR-80(z)	31
	1HVR*AOV165	36	Butterfly	150	2	2	33122-SR-80(z)	27
	1HVR*AOV166	36	Butterfly	150	2	2	33122-SR-80(z)	27

12

Table 3.9A-11 (Cont)

34 = Minimum flow bypass to protect pump
35 = RCIC turbine drain pot drain isolation
36 = RCIC turbine steamline drain pot drain isolation
37 = RCIC turbine steamline drain pot drain line orifice bypass
38 = Isolation from HVR system
39 = Isolate CPP/service air system
40 = Chilled water circ pump isolation
41 = Temperature control of control building unit coolers
42 = SVV system air supply
43 = Supply to standby cooling tower
44 = Supply standby service water to Division III unit cooler
45 = Supply standby service water to the PVLCS compressors
46 = Supply to RRCCW HTRY
47 = Auxiliary building isolation
48 = SSW pump discharge
49 = HPCS DG isolation 12
50 = Turbine building isolation
51 = Main control room isolation
52 = Safety class change
53 = Drywell sample isolation valves
54 = Containment sample isolation valves
55 = Safety-related air supply to PVLSC compressor skid
56 = ASME III piping to nonsafety class tubing
57 = Sample isolation
58 = Supply standby service water to control building chilled water condensers
59 = Pressure Relief
60 = Pressure ratings for pressure relief valves are recorded inlet/outlet
61 - Provide vacuum release for service water return headers. 21

KEY TO MANUFACTURER

1 = Velan Corp
2 = Posi-Seal
3 = Jamesbury
4 = Atwood & Morrill
5 = Copes - Vulcan
6 = Target Rock
7 = Fischer
8 = Crosby

KEY TO VALVE OPERATOR/MANUFACTURER

1 = Motor/Limitorque
2 = Air/Matryx
3 = Air/Atwood & Morrill (no model number provided)
4 = Solenoid/Target Rock
5 = Electrohydraulic/Borg Warner
6 = Air/Fischer
7 = Mechanical Operator/Target Rock 12

Code Boundary, 1974 Edition, ASME Boiler and Pressure Vessel Code, Sec. III.

TABLE 3.9A-22

CODE CLASS N-318 APPLICATIONS

Pipe Support Number	Method of Attachment	Piping System
1RHS*PSST2060A2	Fillet weld	Residual heat removal
2SWP*PSST1761A3	Fillet weld	Service water
1WCS*PSSP3186A2	Full penetration weld	Reactor water cleanup
1SWP*PSA8087A3	Fillet weld	Service water
1RHS*PSR3059A2	Full penetration weld	Residual heat removal
1RHS*PSST3157A2	Fillet weld	Residual heat removal
1RHS*PSSP2101A2	Fillet weld	Residual heat removal

TABLE 210.92-1

RESIDUAL HEAT REMOVAL PIPING
STRESS PROBLEM AX-71B 21

Node	Primary Stress (psi)	Allowable (psi) 3 S_m
5	23836	53484
400	21250	53484
6	12007	53484
7	13435	53484
12	18462	53484
15	18909 (Branch)	53484
16	32088 (Branch)	53484
161	32049	53484
17	18909	53484
18	18700	53484
22	12920	60000
23	17342 (Branch)	60000
25	11825	60000
26	11492	60000
27	11387	60000 21
30	11262	60000
31	12287	60000
32	11570	60000
35	10880	60000
37	12054	60000
40	12214	60000
41	12816	60000
42	11806	60000
45	14446	60000
47	13055	60000
50	10103	60000
51	13155	60000
52	13786	60000
55	11909	60000
550	13195	60000
551	13559	60000
552	12981	60000
56	12069	60000
561	11282	60000
57	13631	60000
60	12095	60000
62	13582	60000
63	14486	60000
64	11908	60000
640	10647	60000
641	10165	60000

TABLE 210.92-1 (Cont)

Node	Primary Stress (psi)	Allowable (psi) 3 S_m
65	10613	60000
66	9866	60000
660	9578	60000
67	10221	60000
68	10037	60000
700	10016	60000
69	12945	60000
70	11601	60000
72	8789	60000
75	11242	60000
76	12960	60000
77	10381	60000
80	9874	60000
82	12082	60000
83	14266	60000
85	14298	60000

21

Stresses were calculated in accordance with ASME Section III, Subarticles NB-3652 (Equation 9) and NB-3656.

See Figure 210.92-1.

TABLE 210.92-2

RESIDUAL HEAT REMOVAL PIPING - REACTOR BUILDING 21
STRESS PROBLEM AX-71C-REV 2

Node	Primary Stress (psi)	Allowable (psi) 3 S_m
5	24770	53484
400	21957	53484
6	12134	53484
7	13970	53484
12	18427	53484
13	32822 (Branch)	53484
15	19913	53484
17	20244	53484
22	14600	60000
300	17899 (Branch)	60000
23	11336	60000
25	11014	60000
27	11114	60000
28	13155	60000
30	13394	60000
31	12303	60000
32	11534	60000
35	11696	60000
37	12274	60000
40	11958	60000
42	10070	60000
43	12805	60000
44	13204	60000
45	13683	60000
46	15093	60000
462	12794	60000
461	12062	60000
463	11358	60000
47	11687	60000
470	11251	60000
48	11069	60000
49	10748	60000
50	13443	60000
54	12975	60000
55	12790	60000
57	11029	60000
60	10686	60000
62	12657	60000
65	12770	60000

21

TABLE 210.92-2 (Cont)

Node	Primary Stress (psi)	Allowable (psi) 3 S_m
67	14795	60000
70	12468	60000

21

Stresses were calculated in accordance with ASME Section III, Subarticles NB-3652 (Equation 9) and NB-3656.

See Figure 210.92-2.

TABLE 210.92-3

RESIDUAL HEAT REMOVAL PIPING
STRESS PROBLEM AX-71D

Node	Primary Stress (psi)	Allowable (psi) 3 S_m
5	18143	53484
6	13076	53484
8	11646	53484
10	14164	53484
15	15506	53484
100	15366	53484
35	31900	53484
36	2339 (Branch)	53484
37	14310	53484
38	14173	53484
40	13993	53484
50	12169	60000
52	22438	60000
55	11626	60000
57	11086	60000
60	12206	60000
62	10417	60000
65	9720	60000
70	12628	60000
75	10899	60000
80	11752	60000
82	8922	60000
84	8624	60000
85	9407	60000
87	12722	60000
90	14237	60000
500	13621	60000
53	7524 (Branch)	60000

Stresses were calculated in accordance with ASME Section III, Subarticles NB-3652 (Equation 9) and NB-3656.

See Figure 210.92-3.

TABLE 210.92-4

LOW PRESSURE CORE SPRAY (CSL) SYSTEM
STRESS PROBLEM AX-78A

Node	Primary Stress (psi)	Allowable (psi) $3S_m$
5	12062	54204
7	19664	54204
10	15121	54204
12	12691	54204
15	12217	54204
17	11899	54204
20	12160	54204
35	13503	54204
37	14308	54204
38	14456	54204
39	14488	54204
40	14513	54204
50	13647	60000
51	13345	60000
5152	12994	60000
52	12854	60000
55	12912	60000
60	12080	60000
62	13268	60000
65	12555	60000
70	11469	60000
72	11317	60000
75	11888	60000
78	13628	60000
80	13815	60000
85	12936	60000
90	10092	60000
92	10570	60000
95	10783	60000
100	10501	60000
110	10488	60000

21

Stresses were calculated in accordance with ASME Section III, Subarticles NB-3652 (Equation 9) and NB-3656.

See Figure 210.92-4.

TABLE 210.92-5

HIGH PRESSURE CORE SPRAY (CSH) SYSTEM
STRESS PROBLEM AX-83A

Node	Primary Stress (psi)	Allowable (psi) $3S_m$
5	13263	54204
10	20930	54204
20	17042 (Branch)	54204
22	14307	54204
25	15543	54204
35	15619	54204
40	15943	54204
42	15716	54204
45	15453	54204
55	13956	60000
58	13250	60000
60	11247	60000
65	10862	60000
70	10374	60000
71	10939	60000
72	12353	60000
75	11411	60000
80	11750	60000
82	11478	60000
85	12575	60000
88	12971	60000
90	11373	60000
95	12235	60000
97	11928	60000
100	10258	60000
105	11006	60000
110	9555	60000

21

Stresses were calculated in accordance with ASME Section III, Subarticles NB-3652 (Equation 9) and NB-3656.

See Figure 210.92-5.

TABLE 210.92-6

RHS LPCI SYSTEM
PIPE SUPPORT LOADS FOR STRESS PROBLEM AX-71B

Node Point	Support Function	Support Mark No.	Load Fx(lb)	Load Fy(lb)	Load Fz(lb)	
15	Spring	1RHS*PSSH3070A1	0	0	0	
17	Snubber	1RHS*PSSP3071A1	0	-9241	0	
25	Strut	1RHS*PSST3072A1	-20235	0	0*	21
310	Snubber	1RHS*PSSP3073A1	-12157	0	0*	
32	Snubber	1RHS*PSSP3074A1	-10550	0	0*	
40	Spring	1RHS*PSSH3075A1	0	0	0	
42	Strut	1RHS*PSST3076A1	-9812	0	0	
47	Restraint	1RHS*PSR3077A1	0	-11096	0	
50	Snubber	1RHS*PSSP3078A1	-12963	0	0	
510	Snubber	1RHS*PSSP3079A1	-12319	0	0*	21
551	Snubber	1RHS*PSSP3164A1	-19734	0	0*	
57	Strut	1RHS*PSST3080A1	0	-14166	0	
630	Snubber	1RHS*PSSP3158A1	-22382	0	0*	
65	Snubber	1RHS*PSSP3159A1	-13480	0	0*	
67	Restraint	1RHS*PSR3160A1	0	-10515	0	
70	Restraint	1RHS*PSR3081A1	0	-8239	-14050	
82	Restraint	1RHS*PSR3082A1	0	-9099	0	

*Loads are in the local coordinates. 21

NOTES: 1. Loads are in the global coordinate system. 21
2. Loads shown above are SRSS (annulus pressurization, SSE, fluid transient).

TABLE 210.92-7

RHS LPCI SYSTEM
PIPE SUPPORT LOADS FOR STRESS PROBLEM AX-71C

Node Point	Support Function	Support Mark No.	Load Fx(lb)	Load Fy(lb)	Load Fz(lb)	
15	Spring hanger	1RHS*PSSH3088A1	0	0	0	
23	Strut	1RHS*PSST3089A1	-18902	0	0*	21
30	Snubber	1RHS*PSSP3090A1	-13620	0	0	
310	Snubber	1RHS*PSSP3091A1	-7398	0	0*	
40	Spring hanger	1RHS*PSSH3092A1	0	0	0	
44	Snubber	1RHS*PSSP3161A1	-11824	0	0*	21
460	Snubber	1RHS*PSSP3162A1	-11481	0	0*	
47	Snubber	1RHS*PSSP3094A1	-12034	0	0*	
48	Strut	1RHS*PSST3095A1	0	0	-9911	
49	Spring hanger	1RHS*PSSH3093A1	0	0	0	
54	Restraint	1RHS*PSR3097A1	0	0	-13527	21
60	Spring hanger	1RHS*PSSH3096A1	0	0	0	
67	Restraint	1RHS*PSR3098A1	0	-8032	0	21

*Loads are in the local coordinate system. 21

NOTES: 1. Loads are in the global coordinate system. 21
2. Loads shown above are SRSS (annulus pressurization, SSE, fluid transient).

TABLE 210.92-8

RHS LPCI SYSTEM
PIPE SUPPORT LOADS FOR STRESS PROBLEM AX-71D

Node Point	Support Function	Support Mark No.	Load Fx(lb)	Load Fy(lb)	Load Fz(lb)	
37	Snubber	1RHS*PSSP3066A1	-12861	0	0.0*	
38	Spring	1RHS*PSSH3067A1	0.0	-14	0.0	
55	Spring	1RHS*PSSH3068A1	0.0	-63	0.0	21
57	Restraint	1RHS*PSR3065A1	-16891	0.0	0.0*	
84	Snubber	1RHS*PSSP3139A1	-15168	0.0	0.0*	
90	Strut	1RHS*PSST3061A1	-14660	0.0	0.0*	

*Loads are in the local coordinate system. 21

NOTES: 1. Loads are in the global coordinate system. 21
2. Loads shown above are SRSS (annulus pressurization, SSE, fluid transient.)

TABLE 210.92-9

CSL SYSTEM 21
PIPE SUPPORT LOADS FOR STRESS PROBLEM AX-78A

Node Point	Support Function	Support Mark No.	Load Fx(lb)	Load Fy(lb)	Load Fz(lb)
17	Snubber	1CSL*PSSP3000A1	0	-2997	0
37	Spring	1CSL*PSSH3001A1	0	-70	0
62	Snubber	1CSL*PSSP3002A1	-146881	0	0
72	Snubber	1CSL*PSSP3003A1	0	-7370	0
78	Spring	1CSL*PSSH3004A1	0	-58	0
90	Snubber	1CSL*PSSP3005A1	-8561	0	0*

21

*Loads are in the local coordinate system. 21

NOTES: 1. Loads are in the global coordinate system. 21
2. Loads shown above are SRSS (annulus pressurization, SSE, fluid transient.)

TABLE 210.92-10

CSH SYSTEM |21
PIPE SUPPORT LOADS FOR STRESS PROBLEM AX-83A

Node Point	Support Function	Support Mark No.	Load Fx(lb)	Load Fy(lb)	Load Fz(lb)	
22	Snubber	1CSH*PSSP3001A1	0	-3371	0	|21
40	Spring Hanger	1CSH*PSSH3002A1	0	-52	0	
72	Strut	1CSH*PSST3003A1	-18910	0	0*	|21
82	Snubber	1CSH*PSSP3004A1	-7679	0	0*	
85	Spring Hanger	1CSH*PSSH3005A1	0	-48	0	
88	Strut	1CSH*PSSM3006A1	0	0	-13643	|21

*Loads are in the local coordinate system. |21

NOTES: 1. Loads are in the global coordinate system. |21
2. Loads shown above are SRSS (annulus pressurization, SSE, fluid transient).

QUESTION 410.4 (3.6A)

Provide the missing information mentioned in Tables 3.6B-3 and 3.6B-4 and in Figure 3.6B-4 or supply a schedule for submittal of the information.

RESPONSE

7 Information missing in Table 3.6B-3 and Figure 3.6B-4 has
21 been provided. Table 3.6B-4 has been determined to be unnecessary and has been deleted.

QUESTION 210.43 (3.6A)

Tables 3.6A-1 through 3.6A-11 - Please provide a schedule for completion of the stress analyses and updating of these tables. Will cumulative usage factors be limited to less than 1.0?

RESPONSE

The stress analyses are updated in Tables 3.6A-1 through 3.6A-11b. As noted in revised Section 3.6.2.5A, cumulative usage factors are limited to less than 1.0.

1 1
2 1

QUESTION 210.45 (3.6A)

Tables 3.6A-12 through 3.6A-20, 3.6A-27 Through 3.6A-42 and 3.6A-45 Through 3.6A-51 - Provide a schedule for completion of these tables.

RESPONSE

21 Tables 3.6A-12 through 3.6A-20, 3.6A-27 through 3.6A-42, and 3.6A-45 through 3.6A-51 have been completed.

QUESTION 210.46 (3.6A)

Figures 3.6A-12 Through 3.6A-19 and 3.6A-21 through 3.6A-33 - Provide a schedule for completion of pipe stress analyses as they effect pipe break location selections.

RESPONSE

The pipe stress analyses, and Figures 3.6A-12 through 3.6A-19 and 3.6A-21 through 3.6A-33, have been completed. |11| 21

QUESTION 210.54 (Appendix 3C)

Section 3C.2-7 through 3C.5-1 - Please provide a schedule for completion of the failure mode analysis for pipe breaks and cracks for these systems.

RESPONSE

The remaining sections of Appendix 3C have been provided. 21

QUESTION 210.5 (3.9A)

Provide the missing information mentioned in Tables 3.9A-5, 3.9A-10, and 3.9A-11 or provide a schedule for submittal of the information.

RESPONSE

The information required to complete Tables 3.9A-5, 3.9A-10, and 3.9A-11 has been provided. |11 |21

QUESTION 210.6 (3.9.1.1.5B)

Provide the missing information mentioned regarding "cycles" or provide a schedule for submittal of the information.

RESPONSE

7 The missing information has been provided.

21

QUESTION 210.8 (3.9.2.2.2.7B)

Provide the missing information mentioned in the FSAR in the second paragraph or provide a schedule for submittal of this information.

RESPONSE

7 | The missing information has been provided.

21

QUESTION 210.11 (3.9.3.1B)

Provide cumulative deformation and usage factor values for all ASME Code Class 1 components. Table 3.9.B-2 appears to give only partial information.

RESPONSE

The missing information has been provided. 7 21

QUESTION 210.65 (3.9.3)

Table 3.9B-2 - Much of the data included in this table will not be available until the New Loads program is completed. Our review cannot be completed until this information is provided. Please provide a schedule for submitting this information. Not all of the criteria for limits are included. Also provide more detailed information on the analysis of the recirculation pump case summarized in Table 3.9B-2i.

RESPONSE

21 Table 3.9B-2 has been completed and supplemented to include the requested information.