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September 29, 1986
ST-HL-AE-1761
File No.: E24.2, G3.16, P4.01

Mr. Vincent S. Noonan, Project Director
PWR Project Directorate #5
U. S. Nuclear Regulatory Commission
Washington, DC 20555

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499-02
Pre SQRT/PVORT Audit Meeting 9/16/86

Dear Mr. Noonan:

Attached are our minutes taken during the recent meeting with your SQRT and PVORT staff members and Mr. Kadambi.

If you should have any questions on this matter, please contact Mr. M. E. Powell at (713) 993-1328.

Very truly yours,

M. R. Wisenburg
Manager, Nuclear Licensing

GET/yd

Attachments:
(1) Minutes of 9/16/86 Meeting on SQRT/PVORT
(2) List of Meeting Attendees
(3) List of NRC Questions on SQRT/PVORT
(4) List of System Designators
(5) Annotated Revisions to FSAR Table 3.9-1.1
(6) Example To Show Correlation Between FSAR Table 3.9-1.2 and the Master List for Motor Operated Valves
(7) Example To Show Correlation Between FSAR Table 3.9-1.2 and the Master List for Other Type Valves
(8) Listing of Safety-Related Limitorque Motor Operated Valves
(9) NRC Handout - Comments on FSAR Sections 3.7, 3.9 and 3.10

L1/NRC/lp

D503

cc:

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South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Meeting Minutes
SQRT/PVORT Pre-Audit Meeting Bethesda, MD 9/16/86

The NRC began by stating that their purpose in having the meeting was to:

1. Better understand the STP program and the status.
2. Determine the schedule for the audit and discuss logistics.
3. Have HL&P respond to questions.

HL&P indicated that a review of the Equipment Qualification (EQ) data base as of Friday, September 12, 1986, showed an EQ completion (installed and qualified) of 86 percent. To expedite schedule HL&P agreed to continue sending copies of PVORT/SQRT information directly to EG&G, attention Messrs. Kido and Singh.

The discussion then centered on the advance questions provided by the NRC (Attachment 3).

HL&P indicated that a list of system designators is contained in the STP Environmental submittal (10CFR50.49) which was submitted to the NRC under separate cover. A copy was provided for convenience (Attachment 4).

The NRC had raised some questions in attachment 3 regarding the use of tag numbers in certain FSAR Tables. In response to that question, HL&P provided a copy of FSAR Table 3.9-1.1 (active pump list) marked up to identify tag numbers (Attachment 5). HL&P agreed to update the FSAR to reflect this information in order to facilitate the NRC review. HL&P also explained that FSAR Table 3.9-1.2, does identify the unique portion of the tag numbers, but not the prefix. The direct correlation of this with the full tag number in the Master List was illustrated in a handout (Attachment 6).

It was also pointed out that the Master List will typically list all motor operated valves (MOVs) as a single assembly entry, including valve, operator, and two internal position switches. Other valves are listed by component. However, since our Equipment Qualification Checklist Package (EQCP) is a purchase order based system, all information for the valve would be available in one package. HL&P provided illustrations of the correlation between FSAR Active Valve list entries of both motor operated valves (Attachment 6) and other type valves (Attachment 7). Attachment 3 illustrates correlation with the pump list. It was explained that the reason for the particular grouping and representation of components in the Master List is that it is a direct electronic transfer of data from the Design Engineering Lists, which are controlled by the respective responsible disciplines. A supplementary list (Attachment 8) was provided to the NRC which specifies the Limitorque actuator type for each valve.

It was explained that the component descriptions provided in the Master List should be complete enough, in many cases, to help identify active components. The NRC agreed that this, together with FSAR Tables 3.9-1.1 and 1.2, was adequate to identify active components.

In response to the question regarding seismic analysis as discussed in the FSAR, the extensive use of seismic testing in the STP qualification program was discussed. HL&P indicated that an update to FSAR Table 3.9-10 was in process and suggested that in the future, this table could be deleted since the seismic qualification information is contained in the Master List. The NRC will get back to HL&P on this issue. However, as an interim measure, the Table will be updated and maintained.

HL&P informed the NRC that pumps are typically qualified by analysis. To date no rotor impact or rubbing is predicted.

In discussing the remaining questions, vis., regarding the turbine driven auxiliary feedwater pump and deep draft pumps, the NRC stated that written responses would be required prior to the audit. The purpose of this meeting was to ensure HL&P understood the questions and to discuss preliminary responses.

With that in mind, HL&P gave a brief description of the turbine driven AFW pump and the tests that have been completed or that are planned. The NRC indicated that they will be particularly interested in references to specific maintenance, operating, and training procedures. These references will be verified during the audit. The NRC said the steam driven AFW pump and driver will be an item selected for the PVORT audit.

HL&P then described the main feedwater check valves and configurations. Criteria and guidelines used by Bechtel and Westinghouse to select, size, and locate check valves were also described. The NRC stated that the questions should be interpreted as applying to all check valves and that the applicant should be prepared to track selected valves back through the criteria and guidelines and to defend selection criteria at the audit.

With regard to deep draft pumps, HL&P referenced the STP letter indicating that STP does not have deep draft pumps (per the dimensional definition in IE Bulletin 79-15 and the NRC guidelines for demonstration of operability of deep draft pumps previously transmitted to HL&P in February, 1982, reference ST-AE-HL-894). However, HL&P does believe it meets the intent of Licensing Review Guide II. NRC requested HL&P to summarize this in their response and to specifically include references to run times and test intervals. There was a question as to the intended applicability of LRG II to STP since the Staff has not formally transmitted the LRG II Guidelines to STP.

HL&P gave the NRC an advance copy of their letter responding to questions on the purge and vent valves. It was also explained that the outboard valves are being changed from motor operated to air operated valves. Qualification testing of these valves is scheduled to be completed in March, 1987. HL&P agreed to provide a copy of the test plan and procedure in order to facilitate the NRC review. The consultant did state that completion of the testing and a review by the NRC was a necessary condition for a license.

L1/NRC/lp

Regarding schedule for the audit, the NRC indicated that the list of candidate audit items will not be available until October 31, 1986. (It will include 35 SQRT items and 16 to 18 PVORT items.) If the HL&P long forms were received by December 1, 1986 the audit could be the week of December 15, 1986. HL&P expressed concern that this schedule would impact other scheduled reviews and audits and would require expenditure of additional resources to assure that all personnel required to support the audit would be available until that time. The NRC responded that December 15, 1986 could be considered the latest date for the audit. They will review their schedules and let HL&P know if the date can be moved up.

At the conclusion of the meeting, the NRC provided several additional SQRT related questions (Attachment 9). HL&P agreed to respond to these questions on an expedited schedule.

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Meeting Minutes
SQRT/PVORT Pre-Audit Meeting Bethesda, MD 9/16/86

Meeting Attendees

Name	Affiliation
N. P. Kadambi	NRC/DPLA/PD#5
S. Hou	NRC/DPLA/EB
J. N. Singh	EG&G Idaho Inc.
C. Kido	EG&G Idaho Inc. (Pump & Valve)
W. F. Guerin	W Nuclear Safety
J. J. McInerney	W Nuclear Safety
G. E. Tandy	HL&P, Lead Engr., EQ
T. B. Dixit	HL&P, Seismic EQ
G. E. Wadkins	HL&P Nuclear Plant Operations Dept.
J. R. Braunstein	Bechtel
T. G. Roberson	HL&P Engineering
J. N. Bailey	HL&P Engineering
M. E. Powell	HL&P Licensing
D. H. Ashton	Bechtel - Eng.
D. Getman	Bechtel - Eng.
A. S. Masciantonio	NRC/DPLA/EB

SOUTH TEXAS MASTER LIST QUESTIONS

The following questions are the result of reviewing the South Texas Master Equipment List dated August 18, 1986.

1. The safety system abbreviations (AF, AM, AP, etc.) need to be defined.

2. The method used to identify equipment in FSAR Tables 3.9-1.1 and -1.2 cannot easily be traced to the tag numbers used in the master list. The applicant needs to clarify the identification of safety-related equipment.

3. The Master List does not identify the valve actuators (manufacturer, model, loads, qualification method, and status). The applicant needs to provide this information for each active safety-related valve.

4. The applicant needs to confirm that any pump or valve assembly can be traced to its subcomponents (pump motor, turbine drive, valve operator, limit switches, solenoid, etc.).

5. The Master List needs to identify all active Seismic Category I mechanical and electrical equipment.

SOUTH TEXAS FSAR QUESTIONS

The following questions are the result of reviewing the South Texas Final Safety Analysis Report (FSAR).

1. FSAR Tables 3.9-10 and 11 indicate that the majority of Seismic Category I equipment have been qualified by analysis only. The applicant needs to describe the basis for authenticating the analytical methods used.

2. FSAR Section 3.9.3.2.1.1 discusses pump shaft deflections and allowable rotor clearances. The applicant needs to identify all NSSS and BOP pumps for which rubbing or impact is predicted. The applicant needs to confirm that all active safety-related pumps will not be damaged or cease to perform their design functions.

Turbine Driven Auxiliary Feedwater Pump
(3S141MPA04)
Bingham Willamette 4 x 6 x 9C MSD11

1. Davis Besse reported a partial loss of feedwater on June 9, 1985 while the plant was operating at 90% power. A contributing factor was excessive moisture content in the driving steam to the AFW pump turbine, as well as the difficulty of reestablishing steam flow following the turbine overspeed trip. The applicant should provide the following information, describing the plant specific features and preventative measures in place at South Texas.

   a. Describe how the moisture content in the driving steam to the turbine will be controlled to prevent an overspeed trip.

   b. Confirm that the maintenance procedures for the turbine driven auxiliary feedwater pump will satisfy the equipment manufacturer's recommendation. Provide assurance that all bolts for the pump and turbine assemblies will be regularly checked for their proper torque settings.

   c. Confirm that the trip and throttle valve can be operated easily when a maximum ΔP exists across the valve, such as a turbine overspeed condition.

      (1) Describe the physical location of the valve, height above the floor, valve stem orientation, and the proximity of adjacent equipment or structures that could interfere with the manual operation of the valve.

      (2) Describe the procedures for manually operating the valve during an emergency condition. Identify the responsible personnel who will be involved. Identify the use of any auxiliary equipment (such as a wheel wrench) to operate the valve.

      (3) Verify that the responsible personnel for maintaining or operating the valve are properly trained, including hands-on experience prior to fuel load.

Check Valve Operability

2. IE Notice 86-01 dated January 6, 1985 reported an event caused by the failure of five main feedwater (MFW) check valves. These check valve failures resulted in the loss of MFW system integrity and significant water-hammer damage. The applicant should provide the following information to demonstrate check valve operability.

   a. Describe the methodology used to size and install check valves, considering proximity to flow disruption devices.

   b. Describe tests, if any, used to demonstrate that the valve is not damaged and can still perform its safety function.

   c. Describe what measures are considered to prevent valve chatter, blockage, or failure of the disk assembly.

High Head Safety Injection Pumps
(2N121NPA101 A, B, C)
Pacific Pump 60 x 10 WYRF

Low Head Safety Injection Pumps
(2N121NPA102 A, B, C)
Pacific Pump 10 x 16 WYRF

Essential Cooling Water Pumps
(3R281NPA101 A, B, C)
Hayward Tyler 24 VSH

Containment Spray Pumps
(2N101NPA101 A, B, C)
Pacific Pump 10 x 16 WYRF

3. IE Bulletin 79-15 dated July 11, 1979 reported industry-wide problems associated with the long term operation of deep draft pumps. The applicant's letter dated August 31, 1979 and referenced by NUREG/CR-3049 described the appropriate pumps, but stated that operating experience had not yet been achieved.

   The NRC staff has accepted the Licensing Review Group II (LRG-II) guidelines (Revision 1, September 19, 1983) as a position regarding deep draft pump operability. The applicant shall compare the South Texas program for long term operability of deep draft pumps with the LRG-II guidelines and provide the following information to demonstrate its position.

   a. Identify deviations, if any, from the LRG II guidelines.

   b. Provide justification for any deviations from the LRG II guidelines.

   c. Describe actual operating experience of deep draft pumps, including longest continuous run.

Operability of Containment Purge and Vent Valves

The applicant has not provided the information to demonstrate operability of the containment purge and vent valves per NUREG-0737, TMI Item II.E.4.2(6). This information was requested in an NRC letter dated July 31, 1985 from R. G. LaGrange (NRC-EQB) to G. Knighton (NRC-LB3). The applicant shall submit the appropriate documentation for review prior to fuel load. The evaluation of this issue will be done in the NRC staff's office, not during the plant audit.

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

SYSTEM NAME	SYSTEM DESIGNATOR	EMERGENCY REACTOR SHUTDOWN	CONTAINMENT ISOLATION	REACTOR CORE COOLING	CONTAINMENT HEAT REMOVAL	REACTOR HEAT REMOVAL	RADIOACTIVITY CONTROL	SYSTEM SUPPORT
Auxiliary Feedwater	AF	X	X	X		X		
Post Accident Monitoring	AM							X
Post Accident Sampling	AP		X					X(b),(c)
Auxiliary/Steam System & Boiler	AS							X(a)
Breathing Air System	BA		X					
Boron Recycle	BR							X(e)
Process Control System	BS	X	X	X	X	X	X	X
Component Cooling Water	CC	X	X		X	X		X(a)
Containment Combustible Gas Control	CG							X
Chilled Water	CH							X(a)
Containment (Hydrogen) Monitoring	CM		X					X(a)
Containment Spray	CS		X		X		X	
Condensate Storage (Auxiliary Feedwater)	CT							X(a)
Plant Computer	CU							X

ATTACHMENT 4
ST-HL-AE-1761
PAGE 1 OF 6

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

SYSTEM NAME	SYSTEM DESIGNATOR	EMERGENCY REACTOR SHUTDOWN	CONTAINMENT ISOLATION	REACTOR CORE COOLING	CONTAINMENT HEAT REMOVAL	REACTOR HEAT REMOVAL	RADIOACTIVITY CONTROL	SYSTEM SUPPORT
Chemical and Volume Control	CV	X	X					
Standby Diesel Generator	DG							X(a)
Fuel Oil Storage	DO							
Water Jacket	JW							
Lube Oil	LU							
Air Starting	SD							
125V dc Power	DJ							X(a)
Non Radioactive Plumbing Drains and Sumps (Maintain Pressure Boundary)	DR							X(e)
Make-Up Demineralizer	DW		X					
Radioactive Vents and Drain	ED		X					
Electro-Hydraulic Systems (Generate Reactor Trip Signals)	EH	X (Anticipatory)						
Essential Cooling Water	EW							X(a)
Spent Fuel Pool Cooling and Cleanup	FC		X					
Fuel Handling	FH							X
Fire Protection System	FP		X					

ATTACHMENT 4
ST-HL-AE-1761
PAGE 2 OF 6

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

SYSTEM NAME	SYSTEM DESIGNATOR	EMERGENCY REACTOR SHUTDOWN	CONTAINMENT ISOLATION	REACTOR CORE COOLING	CONTAINMENT HEAT REMOVAL	REACTOR HEAT REMOVAL	RADIOACTIVITY CONTROL	SYSTEM SUPPORT
Feedwater	FW		X					
Control Room HVAC	HB						X	X(a)
Containment Building HVAC	HC		X		X			
Electric Auxiliary Building HVAC	HE							X(a)
Fuel Handling Building HVAC	HF						X	X(a)
Standby Diesel Generator Building HVAC	HG							X(a)
Mechanical Auxiliary Building HVAC	HM							X(a)
Miscellaneous HVAC	HZ							X(a)
Instrument Air	IA		X					
Incore Instrumentation	II							X
Containment Leak Rate Testing	IL		X					
Emergency ac Lighting	LA							
Main Steam	MS	X	X	X		X		
Main Steam Drains	MT		X					

ATTACHMENT 4
ST-HL-AE-1761
PAGE 3 OF 6

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

SYSTEM NAME	SYSTEM DESIGNATOR	EMERGENCY REACTOR SHUTDOWN	CONTAINMENT ISOLATION	REACTOR CORE COOLING	CONTAINMENT HEAT REMOVAL	REACTOR HEAT REMOVAL	RADIOACTIVITY CONTROL	SYSTEM SUPPORT
Nuclear instrumentation	NI	X						
Nitrogen Storage System	NL		X					
4KV ac Power	PK							x(a)
480V Load Centers	PL							x(a)
480V MCCS	PM							x(a)
Reactor Coolant Pump Oil	PO		X					
Primary Sampling System	PS		X					
Radiation Monitoring	RA		X				X	
Reactor Coolant	RC	X	X	X		X		
Reactor Coolant Vacuum Degassing	RD		X					
Residual Heat Removal	RH	X	X	X		X		
Reactor Makeup Water	RM		X					
Rod Control	RS	X						
Station Air (Maintain Pressure Boundary)	SA		X					
Steam Generator Blowdown	SB		X					

ATTACHMENT 4
ST-HL-AE-1761
PAGE 4 OF 6

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

SYSTEM NAME	SYSTEM DESIGNATOR	EMERGENCY REACTOR SHUTDOWN	CONTAINMENT ISOLATION	REACTOR CORE COOLING	CONTAINMENT HEAT REMOVAL	REACTOR HEAT REMOVAL	RADIOACTIVITY CONTROL	SYSTEM SUPPORT
Engineering Safety Feature Actuation	SF	X	X	X	X			X
Safety Injection	SI		X	X				
S. G. Sludge Lancing and Chemical Cleaning System	SL		X					
Solid State Protection	SP	X	X	X	X		X	
120V ac Class 1E Uninterrupted Power Supply	VA							X(a)
Radwaste Liquid	WL		X					
Containment Building Airlock	XC		X					
Various Systems Instrument Bridle Valving	ZE ZH ZJ ZK ZP ZT ZQ ZU ZV							X

ATTACHMENT 4
ST-HL-AE-1761
PAGE 5 OF 6

LIST OF SYSTEMS NEEDED TO PERFORM SAFETY FUNCTIONS

NOTES:

a. Provides support for other safety systems.

b. Indication of selected parameters only.

c. Safety grade control of Class 1E valves.

d. RHR/Safe Shutdown implication.

e. Pressure boundary only.

ATTACHMENT 5
ST-HL-AE-1761
PAGE 1 OF 3

TABLE 3.9-1.1

LIST OF ACTIVE COMPONENTS

Pump	System	System Designator	ANS Safety Class	Pump Tag Number
Containment Spray Pump 1, 2, 3	CSS	CS	2	2N101NPA101A, B, C
Boric Acid Transfer Pump 1, 2	CVCS	CV	3	3R171NPA103A, B
Centrifugal Charging Pump 1, 2	CVCS	CV	2	2R171NPA101A, B | 41
High-Head Safety Injection Pump 1, 2, 3	SIS	SI	2	2N121NPA101A, B, C
Low-Head Safety Injection Pump 1, 2, 3	SIS	SI	2	2N121NPA102A, B | 32
Spent Fuel Pool Pump 1, 2	SFPCCS	FC	3	3R211NPA101A, B | 41
Auxiliary Feedwater Pump 1, 2, 3, 4	AFW	AF	3*	3S141MPA01, 02, 03, 04
CCW Pump 1, 2, 3	CCW	CC	3*	3R201NPA101A, B, C
ECW Pump 1, 2, 3	ECW	EW	3*	3R281NPA101A, B, C
ECW Screen Wash Pump 1, 2, 3	ECW	EW	3*	3R281NPA102A, B, C
ECW Traveling Water Screens 1,2,3	ECW	EW	3*	3R281TVTW101A, B, C
Reactor Makeup Water Pump 1,2	RMWS	RM	3*	3R271NPA101A, B
Essential Chilled Water Pumps 1,2,3	ESSCW	CH	3*	3V111VPA004, 005 | 006 41
ECW Self Cleaning Strainers 1,2,3	ECW	EW	3*	3R281NSP101A, B, C

*BOP scope of supply

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: NSSS UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
SAFETY SYSTEM: CS FUNCTION: CONTAINMENT ISOLATION, RHR, AND RADIOACTIVITY CNTL A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER	TYPE / DESCRIPTION / REMARKS	MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	BLDG / ELEV / (FT-IN)	MTG	LOADS CONSIDERED: SEIS	OTHER DYNAMIC: OBE H/V (G) / SSE H/V (G) / ZPA	QUAL METHOD: ANALYSIS / TEST FRQ / TEST DIR	LOWEST NAT: F/B (HZ) / S/S (HZ) / V (HZ)	--STATUS-- QUAL	INST	--RRS FIGURE REFERENCES--
1	N1CS-PSV -3801	VALVE	CROSBY	N/A	MAB	LM	X	X	S	>33	A	B	N/A
2		PRESSURE SAFETY VALVE	J0-25 B		010			2.0 / 2.0	N/A	>33			
3			220					4.0 / 4.0	N/A	>33			
4		NON-ACTIVE VALVE											
1	2N1O1NPA101A	PUMP	PACIFIC PUMPS	236993 *	FHB	CF	X		S/D	F3	A	D	
2		CONTAINMENT SPRAY PUMP			-21			1 / 1		F3			
3								2.1 / 2.1		F3			
4		*SEE NOTE 12A UNDER ABBREVIATION		DYNAMIC ANALYSIS PERFORMED ONLY TO DETERMINE COMPONENT					NATURAL FREQUENCY				
1	2N1O1NPA101A	MOTORS	WESTINGHOUSE	14926-9999(1)-00046-DNN	FHB	CF	X	N/A	S	F1	A	D	4N169S-39103 ,39104,39121
2	01	CONTAINMENT SPRAY PUMP MOTOR	400 H.P. 4 KV		-21			0.15 / 0.15	MF	F1			THRU 39124
3			AE-2)					0.20 / 0.25	TD	F1			
4		TEST PERFORMED FOR STATOR AND MOTORETTES, ANALYSIS USED FOR MOTOR QUAL (ANALYSIS REPORT IS M PROPRIETARY)											
1	2N1O1NPA101B	PUMP	PACIFIC PUMPS	236993 *	FHB	CF	X		S/D	F3	A	D	
2		CONTAINMENT SPRAY PUMP			-21			1 / 1		F3			
3								2.1 / 2.1		F3			
4		*SEE NOTE 12A UNDER ABBREVIATION		DYNAMIC ANALYSIS PERFORMED ONLY TO DETERMINE COMPONENT					NATURAL FREQUENCY				
1	2N1O1NPA101B	MOTORS	WESTINGHOUSE	14926-9999(1)-00046-DNN	FHB	CF	X	N/A	S	F1	A	D	4N169S-39103 ,39104,39121
2	01	CONTAINMENT SPRAY PUMP MOTOR.	400 H.P. 4 KV		-21			0.15 / 0.15	MF	F1			THRU 39124
3			AE-2)					0.20 / 0.25	TD	F1			
4		TEST PERFORMED FOR STATOR AND MOTORETTES, ANALYSIS USED FOR MOTOR QUAL (ANALYSIS REPORT IS M PROPRIETARY)											
1	2N1O1NPA101C	PUMP	PACIFIC PUMPS	236993 *	FHB	CF	X		S/D	F3	A	D	
2		CONTAINMENT SPRAY PUMP			-21			1 / 1		F3			
3								2.1 / 2.1		F3			
4		*SEE NOTE 12A UNDER ABBREVIATION		DYNAMIC ANALYSIS PERFORMED ONLY TO DETERMINE COMPONENT					NATURAL FREQUENCY				
1	2N1O1NPA101C	MOTORS	WESTINGHOUSE	14926-9999(1)-00046-DNN	FHB	CF	X	N/A	S	F1	A	D	4N169S-39103 ,39104,39121
2	01	CONTAINMENT SPRAY PUMP MOTOR.	400 H.P 4 KV		-21			0.15 / 0.15	MF	F1			THRU 39124
3			AE-2)					0.20 / 0.25	TD	F1			
4		TEST PERFORMED FOR STATOR AND MOTORETTES, ANALYSIS USED FOR MOTOR QUAL (ANALYSIS REPORT IS M PROPRIETARY)											
1	2N1O1X-CS-0001A	GV	WEST EMD	214219	FHB	LM	X	X	S	>33	A	B	N/A
2		0008.000 INCH GATE VALVE MOTOR OPERATED			-19			2.0 / 2.0	N/A	>33			
3								4.0 / 4.0	N/A	>33			
4		ACTIVE VALVE											
1	2N1O1X-CS-0001B	GV	WEST EMD	214219	FHB	LM	X	X	S	>33	A	B	N/A
2		0008.000 INCH GATE VALVE MOTOR OPERATED			-19			2.0 / 2.0	N/A	>33			
3								4.0 / 4.0	N/A	>33			
4		ACTIVE VALVE											

ATTACHMENT 5
ST-HL-AE-1761
PAGE 2 OF 3

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

TAG NUMBER / TYPE / DESCRIPTION / REMARKS	EQUIPMENT: MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	LOCATION: BLDG / ELEV (FT-IN)	MTG	LOADS CONSIDERED: SEIS REQD / ZPA; OTHER DYNAMIC: OBE H/V (G) / SSE H/V (G)	QUAL METHOD: ANALYSIS / TEST FRQ / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	--STATUS-- QUAL	INST	--RRS FIGURE REFERENCES--
3E251ERR125D AUX RLY PNL RELAY RACK, PANEL OR BOARD	MERCURY CO. #PC-10069-600 4366	14926-4366-00005	EAB 010	CF	X N/A 0.15 / .015 0.32 / 0.25	S&D N/A N/A	>33 19.6 >33	B	A	4N169S-39081 082,167,168, 095,096,097, 038,087,088, 089,090
3E251ERR134C AUX RLY PNL RELAY RACK, PANEL OR BOARD	MERCURY CO. #PC-10069-600 4366	14926-4366-00005	EAB 060	CF	X N/A 0.15 / .015 0.32 / 0.25	S&D N/A N/A	>33 19.6 >33	B	A	4N169S-39081 082,167,168, 095,096,097, 038,087,088, 089,090
3R201NHX101A HEAT EXCHG. COMPONENT COOLING WATER HEAT EXCHANGER	STRUTHERS WELLS N/A 4018	14926-4018-00004-DSC	MAB 026 0	CF	X N/A 0.15 / 0.20 0.30 / 0.30	S N/A N/A	36.03 16.33 41.61	A	A	4N169S-39081 -39082 -39095 -39096 -39097 -39098
3R201NHX101B HEAT EXCHG. COMPONENT COOLING WATER HEAT EXCHANGER	STRUTHERS WELLS N/A 4018	14926-4018-00004-DSC	MAB 026 0	CF	X N/A 0.15 / 0.20 0.30 / 0.30	S N/A N/A	36.03 16.33 41.61	A	A	4N169S-39081 -39082 -39095 -39096 -39097 -39098
3R201NHX101C HEAT EXCHG. COMPONENT COOLING WATER HEAT EXCHANGER	STRUTHERS WELLS N/A 4018	14926-4018-00004-DSC	MAB 026 0	CF	X N/A 0.15 / 0.20 0.30 / 0.30	S N/A N/A	36.03 16.33 41.61	A	A	4N169S-39081 -39082 -39095 -39096 -39097 -39098
3R201NPA101A PUMP COMPONENT COOLING WATER PUMP	HAYWARD-TYLER 18X20X26 NHDJ 4022	4022-01059-DHT/01038-CHT	MAB 010 00	CF	X N/A 0.125 / 0.150 0.220 / 0.250	S N/A N/A	>33 >33 >33	A	A	4N169S-39081 4N169S-39099 4N169S-39101 4N169S-39082 4N169S-39100 4N169S-39102
3R201NPA101B PUMP COMPONENT COOLING WATER PUMP	HAYWARD-TYLER 18X20X26 NHDJ 4022	4022-01059-DHT/01038-CHT	MAB 010 00	CF	X N/A 0.125 / 0.150 0.220 / 0.250	S N/A N/A	>33 >33 >33	A	A	4N169S-39081 4N169S-39099 4N169S-39101 4N169S-39082 4N169S-39100 4N169S-39102
3R201NPA101C PUMP COMPONENT COOLING WATER PUMP	HAYWARD-TYLER 18X20X26 NHDJ 4022	4022-01059-DHT/01038-CHT	MAB 010 00	CF	X N/A 0.125 / 0.150 0.220 / 0.250	S N/A N/A	>33 >33 >33	A	A	4N169S-39081 4N169S-39099 4N169S-39101 4N169S-39082 4N169S-39100 4N169S-39102
3R201NTS101A HORIZ. TANK CCW SURGE TANK *1. IN SITU IMPART TEST FOR FREQUENCY	BRNN MINN TANKS N/A 6029	14926-6029EQ1-00002-BUL	MAB 060	CF	X N/A 0.15 / 0.15 0.32 / 0.25	S *1 N/A	>33 >33 >33	A	A	4N169S-39081 39082,39087, 39088,39089, 39090

ATTACHMENT 5
ST-HL-AE-1761
PAGE 3 OF 3

TABLE 3.9-1.2

ACTIVE VALVES (BOP SYSTEMS)

System	Valve Number[c]	Function[a]	Size (Inch)	Type	Actuated By	ANS Safety Class	Active Status[b]
Component Cooling Water	CC0013	RHR Hx supply	16	Check	Process flow	2	2, 3
	CC0123	RHR Hx supply	16	Check	Process flow	2	2, 3
	CC0183	RHR Hx supply	16	Check	Process flow	2	2, 3
	CC0392	RCDT Hx supply	4	Gate	Motor	3	5
	CC0058	RCFC supply	14	Check	Process flow	2	2, 4
	CC0138	RCFC supply	14	Check	Process flow	2	2, 4
	CC0198	RCFC supply	14	Check	Process flow	2	2, 4
	CC0393	Excess letdown Hx supply	6	Butterfly	Motor	3	5
	CC0297	Excess letdown Hx & RCDT supply	6	Butterfly	Motor	3	5
	CC0768	Charging pumps supply	6	Butterfly	Motor	3	4
	CC0770	Charging pumps supply	6	Butterfly	Motor	3	4
	CC0771	Charging pumps supply	6	Butterfly	Motor	3	4
	CC0772	Charging pumps return	6	Butterfly	Motor	3	4
	CC0774	Charging pumps return	6	Butterfly	Motor	3	4
	CC0775	Charging pumps return	6	Butterfly	Motor	3	4
	CC0137	Chill water to RCFC supply isolation	8	Butterfly	Motor	2	2, 4, 5
	CC0149	Chill water to RCFC return isolation	8	Butterfly	Motor	2	2, 4, 5
	CC0199	Chill water to RCFC supply isolation	8	Butterfly	Motor	2	2, 4, 5
	CC0209	Chill water to RCFC return isolation	8	Butterfly	Motor	2	2, 4, 5
	CC0059	Chill water to RCFC supply isolation	8	Butterfly	Motor	2	2, 4, 5
	CC0070	Chill water to RCFC return isolation	8	Butterfly	Motor	2	2, 4, 5

53

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER / DESCRIPTION / REMARKS	TYPE / MODEL NUMBER / PO NUMBER	MANUFACTURER	QUALIFICATION REPORT NO.	BLDG / ELEV (FT-IN)	MTG	SEIS REQD	OTHER ZPA	DYNAMIC OBE H/V (G)	DYNAMIC SSE H/V (G)	QUAL METHOD / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	--STATUS-- QUAL	INST	--RRS FIGURE REFERENCES--
1	3R201T-CC-0384	PLUG VALVES	XOMOX	14926-6380-00002-BZD	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0003.000 INCH PLUG VALVE HAND OPERATED	FIG.67		052			1.5	/ 1.0		N/A	>33			
3			4030					3.0	/ 2.0		N/A	>33			
4		1. ELEV. SHOWN ARE BUILDING FLOOR ELEV. 2. VALVE IS PASSIVE AND QUALIFIED TO RIM REQUIREMENTS.													
1	3R201T-CC-0385	VALVE	KEROTEST	14926-4032-01027-EKT	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0000.500 INCH DIAPHRAGM VALVE HAND OPERA	-		037			1.5	/ 1.0		SF	>33			
3			4032					3.0	/ 2.0		SD	>33			
4		1. ELEVATION SHOWN IS FLOOR ELEVATION. THE VALVE IS QUALIFIED FOR PLANT ENVELOPE RIM "G" LEVEL., MODEL NUMBER NOT AVAILABILE.													
1	3R201T-CC-0386	VALVE	KEROTEST	14926-4032-01027-EKT	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0000.500 INCH DIAPHRAGM VALVE HAND OPERA	-		037			1.5	/ 1.0		SF	>33			
3			4032					3.0	/ 2.0		SD	>33			
4		1. ELEVATION SHOWN IS FLOOR ELEVATION. THE VALVE IS QUALIFIED FOR PLANT ENVELOPE RIM "G" LEVEL., MODEL NUMBER NOT AVAILABILE.													
1	3R201T-CC-0387	PLUG VALVES	XOMOX	14926-4030-01024-BXD	RCB	LM	X	N/A			N/A	>33	A	A	N/A
2		0001.000 INCH PLUG VALVE HAND OPERATED	FIG.67		037			1.5	/ 1.0		MF	>33			
3			4030					3.0	/ 2.0		SD	>33			
4		1. ELEV. SHOWN ARE BUILDING FLOOR ELEV. 2. VALVE IS PASSIVE AND QUALIFIED TO RIM REQUIREMENTS.													
1	3R201T-CC-0388	DIAPH VALVE	ROCKWELL	14926-6360-00023-DFV	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0000.500 INCH DIAPHRAGM VALVE HAND OPERA	15004PT3		037			1.5	/ 1.0		N/A	>33			
3			6360					3.0	/ 2.0		N/A	>33			
4															
1	3R201T-CC-0389	DIAPH VALVE	ROCKWELL	14926-6360-00023-DFV	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0000.500 INCH DIAPHRAGM VALVE HAND OPERA	15004PT3		037			1.5	/ 1.0		N/A	>33			
3			6360					3.0	/ 2.0		N/A	>33			
4															
1	3R201T-CC-0391	PLUG VALVES	XOMOX	14926-6380-00004-BZD	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0002.000 INCH PLUG VALVE HAND OPERATED	FIG.67		019			1.5	/ 1.0		N/A	>33			
3			4030					3.0	/ 2.0		N/A	>33			
4		1. ELEV. SHOWN ARE BUILDING FLOOR ELEV. 2. VALVE IS PASSIVE AND QUALIFIED TO RIM REQUIREMENTS.													
1	3R201T-CC-0392	VALVE	ANCHOR D	4038-00017-AAD	RCB	LM	X	N/A			S/D	>33	A	A	N/A
2		0004.000 INCH GATE VALVE MOTOR OPERATED			037			1.5	/ 1.0		N/A	>33			
3			4038					3.0	/ 2.0		N/A	>33			
4															
1	3R201T-CC-0393	ASME III BFV	ROCKWELL INT	4028-00017-BHM,00073-AHM	RCB	LM	X	N/A			S	>33	A	A	N/A
2		0006.000 INCH BUTTERFLY VALVE MOTOR OPER	-		037			1.5	/ 1.0		SF	>33			
3			4028					3.0	/ 2.0		SD	>33			
4		ACTIVE VALVES: RIM USED FOR QUALIFICATION													

ATTACHMENT 6
ST-HL-AE-1761
PAGE 2 OF 3

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER	TYPE / DESCRIPTION / REMARKS	EQUIPMENT: MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	LOCATION: BLDG / ELEV (FT-IN)	MTG	LOADS CONSIDERED: SEIS / OTHER DYNAMIC		QUAL METHOD: ANALYSIS / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	STATUS: QUAL	STATUS: INST	RRS FIGURE REFERENCES
1	2R201T-CC-0198	CHECK VALVES	TRW MISSION	14926-4037-01023-CML	MAB	LM	X N/A		S	>33	A	A	N/A
2		0014.000 CHECK VALVES	15SEF-U01		52 00		1.5	/ 1.0	N/A	>33			
3			4037				3.0	/ 2.0	N/A	>33			
4		SEISMIC REQUIRED INPUT IS RIM. ELEVATION SHOWN IS FLOOR ELEVATION.											
1	2R201T-CC-0199	ASME III BFV	ROCKWELL INT	4028-00014-EHM,00036-CHM	MAB	LM	X N/A		S	>33	A	A	N/A
2		0008.000 INCH BUTTERFLY VALVE MOTOR OPER	-		041		1.5	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES: RIM USED FOR QUALIFICATION											
1	2R201T-CC-0208	ASME III BFV	ROCKWELL	[illegible]-4028-0004-CHM	RCB	LM	X N/A		S	>33	A	A	N/A
2		0014.000 INCH BUTTERFLY VALVE MOTOR OPER	-		037		1.5	/ 1.0	SF	>33			
3			8028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES: RIM USED FOR QUALIFICATION, MODEL NUM NOT AVAIL.											
1	2R201T-CC-0209	ASME III BFV	ROCKWELL INT	4028-00014-EHM,00036-CHM	RCB	LM	X N/A		S	>33	A	A	N/A
2		0008.000 INCH BUTTERFLY VALVE MOTOR OPER	-		037		1.5	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES: RIM USED FOR QUALIFICATION											
1	2R201T-CC-0210	ASME III BFV	ROCKWELL INT	4028-00004-CHM,01092-BHM	RCB	LM	X N/A		S	>33	A	A	N/A
2		0014.000 INCH BUTTERFLY VALVE MOTOR OPER	-		037		1.5	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES: RIM USED FOR QUALIFICATION											
1	2R201T-CC-0291	ASME III BFV	ROCKWELL INT	4028-00003-CHM,01092-BHM	MAB	LM	X N/A		S	>33	A	A	N/A
2		0012.000 BM62LS2A-C	-		041		1.0	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES RIM USED FOR QUALIFICATION											
1	2R201T-CC-0318	ASME III BFV	ROCKWELL INT	4028-00003-CHM,01092-BHM	MAB	LM	X N/A		S	>33	A	A	N/A
2		0012.000 BM62LS2A-C	-		041		1.0	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES RIM USED FOR QUALIFICATION											
1	2R201T-CC-0319	CHECK VALVES	TRW MISSION	14926-4037-01023-CML	MAB	LM	X N/A		S	>33	A	A	N/A
2		0012.000 CHECK VALVES	K15SEF-U01		37 00		1.5	/ 1.0	N/A	>33			
3			4037				3.0	/ 2.0	N/A	>33			
4		SEISMIC REQUIRED INPUT IS RIM. ELEVATION SHOWN IS FLOOR ELEVATION.											
1	2R201T-CC-0403	ASME III BFV	ROCKWELL INT	4028-00003-CHM,01092-BHM	RCB	LM	X N/A		S	>33	A	A	N/A
2		0012.000 BM62LS2B-C	-		037		1.0	/ 1.0	SF	>33			
3			4028				3.0	/ 2.0	SD	>33			
4		ACTIVE VALVES RIM USED FOR QUALIFICATION											

ATTACHMENT 6
ST-HL-AE-1761
PAGE 3 OF 3

TABLE 3.9-1.2

ACTIVE VALVES (BOP SYSTEMS) (Continued)

System	Valve[c] Number	Function[a]	Size (Inch)	Type	Actuated By	ANS Safety Class	Active[b] Status
Component Cooling Water (Cont'd)	CC0647	CCW Hx discharge	24	Butterfly	Motor	3	3, 4
	CC0346	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0758	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0327	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0759	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0321	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0756	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0363	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	CC0757	RCP Thermal Barrier supply	2	Check	Process flow	3	1
	FV-4657	Charging pumps return header	6	Butterfly	Air	3	5
	FV-4656	Charging pumps supply header	6	Butterfly	Air	3	5
	FV-4493	RCP return	12	Butterfly	Air	2	2
→	FV-4531	RHR Hx outlet	16	Butterfly	Air	3	3, 4
	FV-4565	RHR Hx outlet	16	Butterfly	Air	3	3, 4
	FV-4548	RHR Hx outlet	16	Butterfly	Air	3	3, 4
	PSV-4503	Surge Tank safety	4x6	Relief	High Pressure	3	1
	FV-4540	PASS supply	1-1/2	Globe	Solenoid	3	5
	FV-4541	PASS supply	1-1/2	Globe	Solenoid	3	5
	FV-4620	RCP Thermal Barrier return	3	Globe	Process fluid	3	1
	FV-4621	RCP Thermal Barrier return	3	Globe	Process fluid	3	1
	FV-4626	RCP Thermal Barrier return	3	Globe	Process fluid	3	1
	FV-4627	RCP Thermal Barrier return	3	Globe	Process fluid	3	1
	FV-4632	RCP Thermal Barrier return	3	Globe	Process fluid	3	1

53

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E — UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION — A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER	EQUIPMENT TYPE / DESCRIPTION	MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	LOCATION BLDG / ELEV (FT-IN)	MTG	SEIS	LOADS CONSIDERED OTHER DYNAMIC: OBE H/V (G) / SSE H/V (G)	QUAL METHOD ANALYSIS / TEST FRQ / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	STATUS QUAL	STATUS INST	RRS FIGURE REFERENCES	
1	A1CC-FT -4512	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00006-ERX	MAB	IM	X	N/A	N/A	>33	A	D	4N169S-39176	4N169S-39178
2		CCW HEAT EXCHANGER OUTLET FLOW TRANSMITT	1153 DB4PB		026			0.4 / 0.25	MF	>33				4N169S-39177
3			4332					0.8 / 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT												
1	A1CC-FT -4530	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB	IM	X	N/A	N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RHR HEAT EXCHANGER FLOW TRANSMITTER	1153 DD5PB		052			0.4 / 0.25	MF	>33				4N169S-39177
3			4332					0.8 / 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT												
1	A1CC-FT -4536	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB	IM	X	N/A	N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RC FAN COOLER FLOW TRANSMITTER	1153 DD4PB		019			0.4 / 0.25	MF	>33				4N169S-39177
3			4332					0.8 / 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT												
1	A1CC-FT -4538	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB	IM	X	N/A	N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RC FAN COOLER FLOW TRANSMITTER	1153 DD4PB		052			0.4 / 0.25	MF	>33				4N169S-39177
3			4332					0.8 / 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT												
1	A1CC-FV -4531	VALVE	FISHER	4027EQ2-00012,00013	RCB	LM	X	N/A	S	>33	A	B	N/A	
2		FLOW RATE VALVE	7610		052			1.5 / 1.0	N/A	>33				
3			4027					3.0 / 2.0	N/A	>33				
4		1. THE ELEVATION SHOWN IS FLOOR ELEVATION 2. 12" VALVE DYNAMIC TEST RESULTS WERE USED TO SHOW THE OPERABILITY OF THE 16"VALVE BY SIMILARITY.												
1	A1CC-FV -4540	SOLENOID VLV	TARGET ROCK	14926-4407-00046-GRZ	MAB	LM	X	N/A	N/A	>33	C	B	N/A	
2		CCW TO POST ACCIDENT SAMPLING	8400-006		052 O			1.5 / 1.0	SF	>33				
3			4407					3.0 / 2.0	SD	>33				
4		1. ELEV. SHOWN IS FLOOR ELEV. 2. VALVE IS QUALIFIED BY RIM TEST. 3. MF TEST ALSO CONDUCTED TO IEEE 382-1980 GENERIC RRS CURVES.												
1	A1CC-FV -4656	BFV VALVE	VALTEK	14926-4409-00201-BVT	MAB	LM	X	N/A	S	>33	A	B	N/A	
2		6"-150# VALDISK VALVE	VALDISK		026			1.5 / 1.0	SF	>33				
3			4409					3.0 / 2.0	SD	>33				
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.												
1	A1CC-FV -4657	BFV VALVE	VALTEK	14926-4409-00201-BVT	MAB	LM	X	N/A	S	>33	A	B	N/A	
2		6"-150# VALDISK VALVE	VALDISK		026			1.5 / 1.0	SF	>33				
3			4409					3.0 / 2.0	SD	>33				
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.												
1	A1CC-FV -4531		ASCO		RCB	EM	X	N/A	S	N/A	A	B	N/A	
2		SOL. VALVE	HVA206-381-6RF		052			1.5 / 1.0	N/A	N/A				
3			4027					3.0 / 2.0	N/A	N/A				
4		1. INSTRUMENT IS QUALIFIED WITH VALVE.												

ATTACHMENT 4
ST-HL-AE-1761
PAGE 2 OF 4

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION

UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER	EQUIPMENT TYPE / DESCRIPTION / REMARKS	MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	LOCATION BLDG / ELEV / (FT-IN)	MTG	LOADS CONSIDERED SEIS REQD / ZPA	OTHER DYNAMIC OBE H/V (G) / SSE H/V (G)	QUAL METHOD ANALYSIS / TEST FRQ / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	--STATUS-- QUAL	INST	--RRS FIGURE REFERENCES--
1	A1CC-FY -4656A	SOLENOID VLV	ASCO	14929-4409-00222-AVT	MAB	LM	X N/A		S	>33	A	B	N/A
2		ASCO SOLENOID VALVE	206-381-4F		026		1.5	/ 1.0	SF	>33			
3			4409				3.0	/ 2.0	SD	>33			
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.											
1	A1CC-FY -4657A	SOLENOID VLV	ASCO	14929-4409-00222-AVT	MAB	LM	X N/A		S	>33	D		N/A
2		ASCO SOLENOID VALVE	206-381-4F		026		1.5	/ 1.0	SF	>33			
3			8409				3.0	/ 2.0	SD	>33			
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.											
1	A1CC-LE -4503C	M.L.I.	FCI	4374-00002-BKF,00026-BKF	MAB	CM	X N/A		N/A	>33	A	A	4N169S-39081 ,39082,39087
2		SENSOR HEAD ASS'Y (M.L.I)	FR72		060		.15	/ .15	MF	>33			,39088,39089 ,39090
3			4374				.35	/ .22	BD	>33			
4													
1	A1CC-LSL -4503C	M.L.I.	FCI	4374-00002-BKF,00026-BKF	MAB	CM	X N/A		N/A	>33	A	A	4N169S-39081 ,39082,39087
2		WATER LEVEL INSTRUMENT(ELECTRONICS)	5181		060		.15	/ .15	MF	>33			,39088,39089 ,39090
3			4374				.35	/ .22	BD	>33			
4													
1	A1CC-LT -4504	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00006-ERX	MAB	IM	X N/A		N/A	>33	A	A	4N169S-39176 4N169S-39178
2		CCW SURGE TANK COMPARTMENT LEVEL TRANSMI	1153 DB4PB		60		0.4	/ 0.25	MF	>33			4N169S-39177
3			4332				0.8	/ 0.5	BD	>33			4N169S-39179
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT											
1	A1CC-PT -4513	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00006-ERX	MAB	IM	X N/A		N/A	>33	A	B	4N169S-39176 4N169S-39178
2		CCW HEAT EXCHANGER OUTLET PRESSURE TRANS	1153 GB7PB		010		0.4	/ 0.25	MF	>33			4N169S-39177
3			4332				0.8	/ 0.5	BD	>33			4N169S-39179
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT											
1	A1CC-TE -4510	TEMP ELEMENT	CONAX CORP	14926-4388-00013-DXT	MAB	LM	X N/A		N/A	>33	A	B	N/A
2		THERMOCOUPLE	7F23-10000-01		029		0.6	/ 0.75	MF	15,17			
3			4388				1.0	/ 1.25	BD	15			
4		THE EQUIPMENT WAS TESTED TO RRS LEVELS IN CONJUNCTION WITH METHODOLOGY DESCRIBED ON PAGE 112 THRU 120 OF REF.1 HERE THEN USED TO OBTAIN AN EQUIVALENT RIM LEVEL.											
1	A1CC-ZSC -4531		NAMCO		RCB	EM	X N/A		S	N/A	A	A	N/A
2		LIMIT SWITCH	EA180-31302		052		1.5	/ 1.0	N/A	N/A			
3			4027				3.0	/ 2.0	N/A	N/A			
4		1. INSTRUMENT IS QUALIFIED WITH VALVE.											
1	A1CC-ZSC -4656	LIMIT SWITCH	NAMCO	14929-4409-00240-AVT	MAB	LM	X N/A		S	>33	A	A	N/A
2		NAMCO LIMIT SWITCH	EA180		29		1.5	/ 1.0	SF	>33			
3			4409				3.0	/ 2.0	SD	>33			
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.											

ATTACHMENT 7
ST-HL-AE-1261
PAGE 3 OF 4

FOR EQUIPMENT LISTED BELOW THE SUPPLIER IS: A/E
SAFETY SYSTEM: CC FUNCTION: EMERGENCY REACTOR SHUTDOWN, CONTAINMENT ISOLATION

UTILITY: HOUSTON LIGHTING & POWER CO. DOCKET NO.: 50-498/499
A/E: BECHTEL ENERGY CORPORATION NSSS: WESTINGHOUSE

	TAG NUMBER	TYPE / DESCRIPTION / REMARKS	MANUFACTURER / MODEL NUMBER / PO NUMBER	QUALIFICATION REPORT NO.	BLDG	ELEV (FT-IN)	MTG	LOADS CONSIDERED: SEIS	OTHER DYNAMIC: REQD OBE H/V (G)	ZPA SSE H/V (G)	QUAL METHOD: ANALYSIS / TEST FRQ / TEST DIR	LOWEST NAT F/B (HZ) / S/S (HZ) / V (HZ)	--STATUS-- QUAL	INST	--RRS FIGURE REFERENCES--	
1	A1CC-ZSC -4657	LIMIT SWITCH	NAMCO	14929-4409-00240-AVT	MAB		LM	X	N/A		S	>33	A	A	N/A	
2		NAMCO LIMIT SWITCH	EA180		29				1.5	/ 1.0	SF	>33				
3			4409						3.0	/ 2.0	SD	>33				
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.														
1	A1CC-ZSO -4531	LIMIT SWITCH	NAMCO	14926-9999(1)-00055-CNM	RCB		EM	X	N/A		NA	F1	A	A	RIM	
2		LIMIT SWITCH	EA180-31302		052				3.2	/ 3.2	SF	F1				
3			4027						4.0	/ 4.0	SD	F1				
4		1. INSTRUMENT IS QUALIFIED WITH VALVE.														
1	A1CC-ZSO -4656	LIMIT SWITCH	NAMCO	14929-4409-00240-AVT	MAB		LM	X	N/A		S	>33	A	A	N/A	
2		NAMCO LIMIT SWITCH	EA180		29				1.5	/ 1.0	SF	>33				
3			4409						3.0	/ 2.0	SD	>33				
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.														
1	A1CC-ZSO -4657	LIMIT SWITCH	NAMCO	14929-4409-00240-AVT	MAB		LM	X	N/A		S	>33	A	A	N/A	
2		NAMCO LIMIT SWITCH	EA180		29				1.5	/ 1.0	SF	>33				
3			4409						3.0	/ 2.0	SD	>33				
4		1. QUALIFIED FOR RIM VALUES BY ANALYSIS AND SMILARITY CAMPARIONS TO GENERIC AND OTHER TESTING. 2. ELEVATION SHOWN IS FLOOR ELEVATION.														
1	B1CC-FT -4517	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00006-ERX	MAB		IM	X	N/A		N/A	>33	A	B	4N169S-39176	4N169S-39178
2		CCW HEAT EXCHANGER OUTLET FLOW TRANSMITT	1153 DB4PB		026				0.4	/ 0.25	MF	>33				4N169S-39177
3			4332						0.8	/ 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT														
1	B1CC-FT -4547	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB		IM	X	N/A		N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RHR HEAT EXCHANGER FLOW TRANSMITTER	1153 DD5PB		052				0.4	/ 0.25	MF	>33				4N169S-39177
3			4332						0.8	/ 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT														
1	B1CC-FT -4553	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB		IM	X	N/A		N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RC FAN COOLER FLOW TRANSMITTER	1153 DD4PB		-11				0.4	/ 0.25	MF	>33				4N169S-39177
3			4332						0.8	/ 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT														
1	B1CC-FT -4555	ELECT. XMITT	ROSEMOUNT INC	14926-4332-00003-ERX	RCB		IM	X	N/A		N/A	>33	A	B	4N169S-39176	4N169S-39178
2		RC FAN COOLER FLOW TRANSMITTER	1153 DD4PB		-11				0.4	/ 0.25	MF	>33				4N169S-39177
3			4332						0.8	/ 0.5	BD	>33			4N169S-39179	
4		THE RRS ARE ENVELOPED RRS FOR THE PLANT														
1	B1CC-FV -4541	SOLENOID VLV	TARGETROCK	14926-4407-00046-GRZ	MAB		LM	X	N/A		N/A	>33	C	B	N/A	
2		ASME SOLENOID VALVE FOR CONTAINMENT ISOL	8400-006		052 0				1.5	/ 1.0	SF	>33				
3			4407						3.0	/ 2.0	SD	>33				
4		1. ELEV. SHOWN IS FLOOR ELEV. 2. VALVE IS QUALIFIED BY RIM TEST. 3. MF TEST ALSO CONDUCTED TO IEEE 382-1980 GENERIC RRS CURVES.														

ATTACHMENT 7
ST-HL-AE-1764
PAGE 4 OF 4

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	3R201T-CC-0647 (C1CC-MOV-0647)	SMB-0
4028	3R201T-CC-0646 (C1CC-MOV-0646)	SMB-00
4028	2R201T-CC-0148 (B1CC-MOV-0148)	SMB-00
4028	2R201T-CC-0130 (B1CC-MOV-0130)	SMB-00
4028	3R201T-CC-0146 (B1CC-MOV-0146)	SMB-000
4028	2R201T-CC-0129 (C1CC-MOV-0129)	SMB-00
4028	2R201T-CC-0149 (B1CC-MOV-0149)	SMB-000
4028	2R201T-CC-0137 (B1CC-MOV-0137)	SMB-000
4028	2R201T-CC-0122 (B1CC-MOV-0122)	SMB-00
4028	3R201T-CC-0139 (B1CC-MOV-0139)	SMB-000
4028	3R201T-CC-0142 (B1CC-MOV-0142)	SMB-000
4028	3R201T-CC-0143 (B1CC-MOV-0143)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	3R201T-CC-0645 (B1CC-MOV-0645)	SMB-0
4028	3R201T-CC-0200 (C1CC-MOV-0200)	SMB-000
4028	2R201T-CC-0190 (C1CC-MOV-0190)	SMB-00
4028	3R201T-CC-0207 (C1CC-MOV-0207)	SMB-000
4028	3R201T-CC-0204 (C1CC-MOV-0204)	SMB-000
4028	2R201T-CC-0189 (A1CC-MOV-0189)	SMB-00
4028	2R201T-CC-0209 (C1CC-MOV-0209)	SMB-000
8028	2R201T-CC-0147 (C1CC-MOV-0147)	SMB-00
4028	3R201T-CC-0192 (C1CC-MOV-0192)	SMB-0
4028	3R201T-CC-0236 (C1CC-MOV-0236)	SMB-00
8028	3R201T-CC-0312 (C1CC-MOV-0312)	SMB-0
4038	3R201T-CC-0392 (C1CC-MOV-0392)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
6381	3R201T-CC-0770 (B1CC-MOV-0770)	SMB-000
6381	3R201T-CC-0771 (C1CC-MOV-0771)	SMB-000
6381	3R201T-CC-0774 (C1CC-MOV-0774)	SMB-000
6381	3R201T-CC-0775 (C1CC-MOV-0775)	SMB-000
4028	2R201T-CC-0012 (A1CC-MOV-0012)	SMB-00
4028	2R201T-CC-0050 (A1CC-MOV-0050)	SMB-00
4028	2R201T-CC-0057 (A1CC-MOV-0057)	SMB-00
4028	2R201T-CC-0059 (A1CC-MOV-0059)	SMB-000
4028	3R201T-CC-0060 (A1CC-MOV-0060)	SMB-000
4028	3R201T-CC-0063 (A1CC-MOV-0063)	SMB-000
4028	3R201T-CC-0064 (A1CC-MOV-0064)	SMB-000
4028	3R201T-CC-0067 (A1CC-MOV-0067)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	3R201T-CC-0235 (A1CC-MOV-0235)	SMB-00
4028	3R201T-CC-0297 (A1CC-MOV-0297)	SMB-000
4028	2R201T-CC-0049 (B1CC-MOV-0049)	SMB-00
8028	2R201T-CC-0068 (B1CC-MOV-0068)	SMB-00
8028	3R201T-CC-0314 (B1CC-MOV-0314)	SMB-0
8028	3R201T-CC-0316 (A1CC-MOV-0316)	SMB-0
4028	3R201T-CC-0393 (B1CC-MOV-0393)	SMB-000
4028	3R201T-CC-0642 (A1CC-MOV-0642)	SMB-00
8028	3R201T-CC-0643 (A1CC-MOV-0643)	SMB-0
6381	3R201T-CC-0768 (A1CC-MOV-0768)	SMB-000
6381	3R201T-CC-0772 (A1CC-MOV-0772)	SMB-000
4028	2R201T-CC-0136 (B1CC-MOV-0136)	SMB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	3R201T-CC-0644 (B1CC-MOV-0644)	SMB-00
8028	3R201T-CC-0052 (A1CC-MOV-0052)	SMB-0
8028	2R201T-CC-0208 (A1CC-MOV-0208)	SMB-00
4028	2R201T-CC-0182 (C1CC-MOV-0182)	SMB-00
4028	3R201T-CC-0032 (B1CC-MOV-0032)	SMB-00
4028	2R201T-CC-0403 (B1CC-MOV-0403)	SMB-000
4028	2R201T-CC-0069 (A1CC-MOV-0069)	SMB-00
4028	2R201T-CC-0199 (C1CC-MOV-0199)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	2R201T-CC-0197 (C1CC-MOV-0197)	SMB-00
4028	2R201T-CC-0210 (C1CC-MOV-0210)	SMB-00
4028	2R201T-CC-0404 (C1CC-MOV-0404)	SMB-000
4028	3R201T-CC-0447 (C1CC-MOV-0447)	SMB-00
4028	2R201T-CC-0070 (A1CC-MOV-0070)	SMB-00
4028	2R201T-CC-0291 (A1CC-MOV-0291)	SMB-000
4028	2R201T-CC-0542 (A1CC-MOV-0542)	SMB-000
4028	3R202T-CC-0132 (B1CC-MOV-0132)	SMB-0
4028	2R201T-CC-0318 (B1CC-MOV-0318)	SMB-000
4028	3R201T-CC-0203 (C1CC-MOV-0203)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CS"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4032	3N101T-CS-0015B (B1CS-MOV-0015B)	SMB-00
4032	3N101T-CS-0015C (C1CS-MOV-0015C)	SMB-00
4000	2N101X-CS-0001A (A1CS-MOV-0001A)	SB-00
4000	2N101X-CS-0001B (B1CS-MOV-0001B)	SB-00
4000	2N101X-CS-0001C (C1CS-MOV-0001C)	SB-00
4032	3N101T-CS-0015A (A1CS-MOV-0015A)	SMB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CV"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2R171X-CV-0003 (A1CV-MOV-0003)	SBD-00
4000	2R171X-CV-0006 (C1CV-MOV-0006)	SBD-00
4032	2R171T-CV-0033A (B1CV-MOV-0033A)	SMB-00
4032	2R171T-CV-0033B (B1CV-MOV-0033B)	SMB-00
4032	2R171T-CV-0033C (B1CV-MOV-0033C)	SMB-00
4032	2R171T-CV-0033D (B1CV-MOV-0133D	SMB-00
4032	2R171T-CV-0079 (B1CV-MOV-0079)	SMB-00
4032	2R171T-CV-0012 (A1CV-MOV-0012)	SMB-00
4032	2R171T-CV-0014 (C1CV-MOV-0014)	SMB-00
4000	2R171X-CV-0023 (C1CV-MOV-0023)	SB-00
4000	1R171T-CV-0465 (A1CV-LCV-0465)	SB-0
4000	2R171X-CV-0113B (*)	SB-00

*Motor tag number is the same as valve tag number.

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CV"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2R171X-CV-0112C (C1CV-MOV-0112C)	SB-00
4000	2R171X-CV-8348 (C1CV-MOV-8348)	SMB-00
4032	2R171T-CV-0013 (C1CV-MOV-0013)	SMB-00
4000	2R171T-CV-0468 (C1CV-LCV-0468)	SB-0
4032	1R171T-CV-0082 (A1CV-MOV-0082)	SMB-00
4032	1R171T-CV-0083 (B1CV-MOV-0083)	SMB-00
8032	2R171T-CV-0077 (C1CV-MOV-0077)	SMB-00
4000	2R171X-CV-0024 (B1CV-MOV-0024)	SB-00
4000	2R171X-CV-0025 (A1CV-MOV-0025)	SB-0
4000	2R171X-CV-0218 (A1CV-MOV-0218)	SB-00
4000	2R171X-CV-8377B (A1CV-MOV-8377B)	SB-00
4000	2R171X-CV-0113A (B1CV-MOV-0113A)	SB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "CV"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2R171X-CV-0112B (C1CV-MOV-0112B)	SB-00
4000	2R171X-CV-8377A (C1CV-MOV-8377A)	SB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "ED"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4038	2Q061T-ED-0064 (B1ED-MOV-0064)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "EW"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4028	3R281T-EW-0151 (C1EW-MOV-0151)	SMB-0
4028	3R281T-EW-0137 (B1EW-MOV-0137)	SMB-0
4028	3R281T-EW-0121 (A1EW-MOV-0121)	SMB-0

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "FP"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4038	2Q271T-FP-0756 (C1FP-MOV-0756)	SMB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "HC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4027	2V141Z-HC-0007 (A1HC-MOV-0007)	SMB-00
4027	2V141Z-HC-0008 (B1HC-MOV-0008)	SMB-00
4027	2V141Z-HC-0009 (A1HC-MOV-0009)	SMB-00
4027	2V141Z-HC-0010 (B1HC-MOV-0010)	SMB-00
4028	2V141T-HC-0003 (B1CH-MOV-0003)	SMB-00
4028	2V141T-HC-0005 (B1CH-MOV-0005)	SMB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "MS"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4053	3S141X-MS-0514 (D1AF-MOV-0514)	SMB-000
6458	2S141T-MS-0143 (D1AF-MOV-0143)	SMB-2

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "RA"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4029	2V141T-RA-0003 (B1RA-MOV-0003)	SMB-000
4029	2V141T-RA-0004 (A1RA-MOV-0004)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "RC"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	1R141X-RC-0001A (A1RC-MOV-0001A)	SB-00
4000	1R141X-RC-0001B (B1RC-MOV-0001B)	SB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "RH"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2R161X-RH-0019B (B1SI-MOV-0019B)	SB-1
4000	2R161X-RH-0019C (C1SI-MOV-0019C)	SB-1
4000	2R161X-RH-0031C (C1SI-MOV-0031C)	SB-1
4000	1R161X-RH-0061B (C1RH-MOV-0061B)	SB-2
4000	2R161X-RH-0019A (A1SI-MOV-0019A)	SB-1
4000	1R161X-RH-0060B (B1RH-MOV-0060B)	SB-2
4000	1R161X-RH-0061A (B1RH-MOV-0061A)	SB-2
4000	2R161X-RH-0031A (A1SI-MOV-0031A)	SB-1
4000	2R161X-RH-0066A (A1RH-MOV-0066A)	SB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "RH"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2R161X-RH-0066B (B1RH-MOV-0066B)	SB-00
4000	1R161X-RH-0060A (A1RH-MOV-0060A)	SB-2
4000	1R161X-RH-0060C (C1RH-MOV-0060C)	SB-2
4000	1R161X-RH-0061C (A1RH-MOV-0061C)	SB-2
4000	2R161X-RH-0031B (B1SI-MOV-0031B)	SB-1

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "SI"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2N121X-SI-0004C (C1SI-MOV-0004C)	SB-1
4000	2N121X-SI-0006C (C1SI-MOV-0006C)	SB-1
4000	2N121X-SI-0008C (C1SI-MOV-0008C)	SB-1
4032	2N121T-SI-0011C (C1SI-MOV-0011C)	SMB-00
4032	2N121T-SI-0014C (C1SI-MOV-0014C)	SMB-00
4000	2N121X-SI-0016C (C1SI-MOV-0016C)	SMB-1
4000	2N121X-SI-0018C (C1SI-MOV-0018C)	SB-00
4000	2N121X-SI-0004B (B1SI-MOV-0004B)	SB-1
4032	2N121X-SI-0011B (B1SI-MOV-0011B)	SMB-00
4032	2N121T-SI-0014B (B1SI-MOV-0014B)	SMB-00
4000	2N121X-SI-0016B (B1SI-MOV-0016B)	SMB-1
4000	2N121X-SI-0018B (B1SI-MOV-0018B)	SB-00

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "SI"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4000	2N121X-SI-0008B (B1SI-MOV-0008B)	SB-1
4000	2N121X-SI-0001A (A1SI-MOV-0001A)	SMB-1
4000	2N121X-SI-0006A (A1SI-MOV-0006A)	SB-1
4032	2N121T-SI-0011A (A1SI-MOV-0011A)	SMB-00
4032	2N121T-SI-0012A (A1SI-MOV-0012A)	SMB-00
4032	2N121T-SI-0014A (A1SI-MOV-0014A)	SMB-00
4000	2N121X-SI-0016A (A1SI-MOV-0016A)	SMB-1
4000	2N121X-SI-0018A (A1SI-MOV-0018A)	SB-00
4000	2N121X-SI-0001B (B1SI-MOV-0001B)	SMB-1
4032	2N121T-SI-0012B (B1SI-MOV-0012B)	SMB-00
4032	2N121T-SI-0013B (B1SI-MOV-0013B)	SMB-00
4000	2N121X-SI-0001C (C1SI-MOV-0001C)	SMB-1

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "SI"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4032	2N121T-SI-9912C (C1SI-MOV-0012C)	SMB-00
4032	2N121T-SI-0013C (C1SI-MOV-0013C)	SMB-00
4000	2N121X-SI-0039A (A1SI-MOV-0039A)	SBD-3
4000	2N121X-SI-0006B (B1SI-MOV-0006B)	SB-1
4000	2N121X-SI-0004A (A1SI-MOV-0004A)	SB-1
4000	2N121X-SI-0008A (A1SI-MOV-0008A)	SB-1
4032	2N121T-SI-0013A (A1SI-MOV-0013A)	SMB-00
4000	2N121X-SI-0039B (B1SI-MOV-0039B)	SBD-3
4000	2N121X-SI-0039C (C1SI-MOV-0039C)	SBD-3

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "WL"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4038	2R301T-WL-0312 (A1WL-MOV-0312)	SMB-000

SOUTH TEXAS PROJECT - UNIT 1
SAFETY-RELATED LIMITORQUE MOTOR OPERATED VALVES

SYSTEM "AF"

P.O. #	VALVE TAG NO. (MOTOR TAG NO.)	ACTUATOR TYPE
4409	A1AF-FV-7525 (*)	SMB-0
4409	C1AF-FV-7523 (*)	SMB-0
6458	2S141T-AF-0019 (D1AF-MOV-0019)	SMB-2
6458	2S141T-AF-0048 (A1AF-MOV-0048)	SMB-2
6458	2S141T-AF-0065 (B1AF-MOV-0065)	SMB-2
4409	B1AF-FV-7524 (*)	SMB-0
4409	D1AF-FV-7526 (*)	SMB-0
6458	2S141T-AF-0085 (C1AF-MOV-0085)	SMB-2

*Motor tag number is the same as the valve tag number.

COMMENTS ON SOUTH TEXAS
FSAR SECTIONS 3.7, 3.9, AND 3.10

1. Paragraph 3.7.1.1 on page 3.7-1 states that none of the points on the STP design response spectra fall below 10 percent of the design response spectra. It is not clear whether the spectra being compared to are those of Regulatory Guide 1.60. It also seems that the wording in this paragraph should be corrected to read, "None of the points falls more than 10 percent below the design response spectrum."

2. Paragraph 3.7.1.3 on page 3.7-3 states that a damping value of 10% was used in the qualification of safety-related cable trays in some cases. No evidence is given that this damping value was supported by test data, as is required by Regulatory Guide 1.61.

3. Paragraph 3.7.2.43, page 3.7-13, indicates that a program named LUSH was used to perform all soil-structure interaction (SSI) analysis. Explain how this program was verified to give correct solutions in the assessment of SSI effects.

4. Paragraph 3.7.2.7 on page 3.7-15 states that model combinations were ignored in the response spectrum analysis of the condensate storage tank. This seems to be indicative of an incomplete analysis. This statement should be clarified to assure that an acceptable analysis has been performed on the tank.

5. Paragraph 3.7.3.5 on page 3.7-24 and paragraph 3.10.2.2.2.2 on page 3.10-7 state that static seismic accelerations are increased by 50% (or amplified by 1.5) for multidegree-of-freedom systems which may be in the resonance region of the response spectra. This increase in the seismic acceleration in an equivalent static analysis is intended to account for multi-modal participation in the structural response. Regulatory Guide 1.100, Position C.1, permits the use of an amplifica-

tion factor of 1.5 for frame-type structures but requires justification for factors used for other structures. Amplifying static seismic accelerations by 50%, therefore, is not acceptable for all multidegree--of-freedom structures unless justification is provided.

6. In paragraph 3.9.3.2.1.3 on page 3.9-44, the condition that sine-beat response spectra envelop floor response spectra in the region of significant response is listed as a sufficient condition to justify the use of sine-beat testing. According to the requirements of IEEE Std 344-1975, this condition alone is not sufficient to justify single--frequency testing. Multi-frequency testing is required to properly simulate the simultaneous response from all modes of multi-degree-of--freedom systems, per IEEE Std 344-1975.

7. Paragraph 3.9.3.2.1.3 on page 3.9-44 states that seismic qualification on pump motors and valve operators can be accomplished by analysis alone, but does not emphasize that this qualification approach should only be used when the equipment operability can be suitably demonstrated by analysis alone. Tables 3.9-10 and 3.9-11 indicate that almost all safety-related Seismic Category I equipment was qualified by analysis alone. Was equipment operability properly demonstrated in the qualification of all this equipment?

8. Paragraph 3.9.3.2.3, Item 2, on page 3.9-46a is confusing in stating that an individual valve is tested separately for plant loadings (including SSE loads) that the valve is expected to withstand in combination during valve operation. Assurance has to be provided that the valve can sustain the combined loads during operation.

9. Paragraph 3.10.1 on page 3.10-3 states that several instrumentation and electrical equipment items were qualified to IEEE Std 344-1971, but does not indicate whether any of this equipment was later qualified to IEEE Std 344-1975 requirements. The NRC has accepted IEEE Std 344-1971 testing for specific pieces of equipment but has not accepted these qualifications on a generic basis. Therefore, the qualification of equipment to IEEE Std 344-1971 requirements has to be evaluated on an item-by-item basis and may in some cases be found unacceptable when IEEE Std 344-1975 requirements are considered.