TELEDYNE
ENGINEERING SERVICES

ATTACHMENT 1 TO TES LETTER 5511-495

The revision pages transmitted by this letter reflect changes in IDVP completion status through Wednesday, August 17, 1983. Additional ITRs have been issued and EOI actions taken on August 17-18th which are summarized by this attachment.

1. ITRs Issued:

   ITR-59, Corrective Action - Stress in Large Bore Piping.
   ITR-60, Corrective Action - Large and Small Bore Piping.
   ITR-63, Corrective Action - HVAC Ducts, Raceways, Instrument Tubing, and Supports.

2. EOI File Actions:

   983: Closed with issuance of ITR-63, Revision 0.

   1143: Opened to identify that excessive loads exist on an HVAC support anchor bolt.

   3009: Opened to identify a potential concern regarding the containment interior structure horizontal design response spectra.

3. Based on the actions identified above, Table 7.4-1 has been updated as indicated by the next two attached pages.

4. The remaining pages of this attachment have been provided by the DCP to update the information included in Section 7.3 of the IDVP Final Report.

TELEDYNE ENGINEERING SERVICES

TABLE 7.4-1

STATUS OF INCOMPLETE VERIFICATIONS DEFINED BY ITRs-8 AND -35
AS OF AUGUST 19, 1983

Report Subsections		Unresolved	ITR	Verification Complete?		
IDVP	PGandE	EOIs	No.*	Field	Design	Mod
4.4.2.2	2.1.2	1097	55	Yes	No	NA
4.4.3	2.1.3	1092	57-1	NA	Yes	No
4.4.4	2.1.1	1014 3009	54	NA	No	No
4.4.5	2.1.1.4.3	1014	51	Yes	No	No
4.4.6	2.1.5		58-1	Yes	Yes	NA
4.4.8	2.1.4	1026 1028	56	Yes	No	No
4.5.2.3a	2.2.1	938 1098 1138 1141	59-1	Yes	Part	No
4.5.2.3b	2.2.3	1098	60-1	Yes	Part	No
4.5.3.2a	2.2.2	1098 1141	61	Yes	Part	NA
4.5.3.2b	2.2.2	1098 1142	60-1	Yes	Part	No
4.6.2.2	2.3.1		67-1	NA	Yes	NA
4.6.3	2.3.1		67-1	NA	Part	NA
4.6.4	2.3.1		67-1	Yes	Part	NA
4.6.5	2.3.1		67-1	Yes	Part	NA

*When the ITR number is followed by another number, the ITR has been issued but a further revision is expected.

TABLE 7.4-1 (Cont)

Report Subsections		Unresolved	ITR	Verification Complete?		
IDVP	PGandE	EOIs	No.*	Field	Design	Mod
4.6.6.3	2.3.3		67-1	Yes	Yes	NA
4.6.6.5	2.5	1134 1143	63-1	No	Part	No
4.6.7	2.3.2		67-1	Yes	Yes	NA
4.6.8.1b	2.4		63-1	Yes	Yes	No
4.6.8.2b	2.6		63-1	Yes	Yes	NA
4.6.9	NA	NA	67-1	Yes	Yes	NA
4.9.1.4	2.3.2.3.3	NA	67-1	NA	Yes	NA
4.9.2	NA	NA	68	Yes	No	NA
4.9.3	NA	NA	65	No	No	No

*When the ITR number is followed by another number, the ITR has been issued but a further revision is expected.

DIABLO CANYON PROJECT

C29078

PHASE I STATUS

August 12, 1983 Update

SUMMARY

In the following we are provided a listing of the status of our Phase I work. We have presented below the scope of the DCP CAP as defined in the Phase I Final Report. This is an update of the July 26, 1983 transmittal, DCVP-TES-1271.

This summary is divided into 3 sections, providing a status of the work for Phase I.

Section 1. Civil/Structural Work

Section 2. Piping and Pipe Supports Design Review

Section 3. Equipment Seismic Design Review

For each section some of the information is presented in tables. The status of all information is in terms of the percent of the work that is complete. Where no percentage are shown, no DCP activity has occurred. Complete back-up information is available in the Phase I Final Report.

SECTION 1. CIVIL/STRUCTURE WORK

The status of the Civil/Structural work is summarized below. Details on the status of this work are presented in Table 1.1 which includes important information contained in the footnotes to this table. For details on this work, please see applicable sections of the Phase I Final Report.

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

C29078

Area		Design Review			Design Revision or Reanalysis[1]					Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established					DCNs Issued	Const. Compl.	As-Bu' Con	DCNs Compl.
					DCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.				
2.1.1	Containment and internals[2]												
2.1.1.3.2.1	Horizontal model of containment for DE and DDE		100										
2.1.1.3.2.2	Horizontal model of containment internal structure for Hosgri		100										
2.1.1.3.2.3	Horizontal model for containment for Hosgri		100										

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications				Comments
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established		Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	As-Const. Compl.	As-Built Compl.	DCNs Compl.	
					DCM	Methodology Established								
2.1.1.3.2.4	Vertical model for containment exterior for Hosgri		100											
2.1.1.3.2.5	Vertical model of containment internal structures and annulus for Hosgri		100											
2.1.1.4	Design review of structures													
2.1.1.4.1	Containment													
2.1.1.4.1.1	Seismic analysis review[3]	100	100	100										
2.1.1.4.1.2	Review of design						100	100	100					
2.1.1.4.2	Internal structure													
2.1.1.4.2.1	Review of seismic analysis	100	100	50										
2.1.1.4.2.2	Review of design[4]						100	90	75					

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area Section	Area Description	Design Review: Criteria Reviewed	Design Review: Method-ology Reviewed	Design Review: Calc. or Analyses Reviewed	Design Revision or Reanalysis[1]: Criteria Clarified and Methodology Established: DCM	Design Revision or Reanalysis[1]: Criteria Clarified and Methodology Established: Methodology Established	Design Revision or Reanalysis[1]: Calc. Prep.	Design Revision or Reanalysis[1]: Calc. Check.	Design Revision or Reanalysis[1]: Calc. Appr.	Modifications: DCNs Issued	Modifications: Const. Compl.	Modifications: As-Built Compl.	Modifications: DCNs Compl.
2.1.1.4.3	Annulus												
2.1.1.4.3.1	Analysis summary						100	100	100				
2.1.1.4.3.2	Review of Design						100	100	90				
	Modification of Annulus[8]									100	99	95	0
2.1.1.5	Polar crane												
2.1.1.5.2	Modifications of Polar Crane[5]						100	100	100	100	100	80	0
--	Review of dome service crane seis. analysis[6]						100	100	100	100	0	0	0
--	Modifications of dome service crane									100	0	0	0
2.1.1.6	Pipe rupture restraints[7]						95	95	45	85	30	0	0
2.1.2	Auxiliary building												
2.1.2.2	Criteria[9]				100								
2.1.2.3	Methodology						100						
2.1.2.3.2.1	Hosgri eval.						100	100	100				
2.1.2.3.2.2	Models DE/DDE anal. models				100		100	100	100				
2.1.2.3.3	Analytical methods				100		100	100	100				

August 12, 1983
0040D/0086P

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established: DCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.
2.1.2.3.4	Description of analytical output					100	100	100	100				
2.1.2.3.5	Local vert. slab flex.[12]					100	100	100	75				
2.1.2.3.5.1	Model method and analysis output[12]						100	100	75				
2.1.2.4	Structure design review												
2.1.2.4.1	Introduction				100	100							
2.1.2.4.2	Slabs[13]				100	100	100	100	50				
2.1.2.4.3	Walls[30]				100	100	95	95	0				
2.1.2.4.4	Load dis-sipation to foundation[31]				100		100	100	0				
2.1.2.4.5	Concrete columns				100		100	100	100				
2.1.2.5	Analysis and qualification of structure						95	95	25				
2.1.3	Fuel handling building[14]				100								
2.1.3.3	Methodology					100							
2.1.3.3.2	Model description					100	100	100	0				
2.1.3.3.3	Model material properties					100	100	100	0				

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area Section	Description	Design Review: Criteria Reviewed	Design Review: Methodology Reviewed	Design Review: Calc. or Analyses Reviewed	Design Revision or Reanalysis[1]: Criteria Clarified and Methodology Established: DCM	Design Revision or Reanalysis[1]: Criteria Clarified and Methodology Established: Methodology Established	Design Revision or Reanalysis[1]: Calc. Prep.	Design Revision or Reanalysis[1]: Calc. Check.	Design Revision or Reanalysis[1]: Calc. Appr.	Modifications: DCNs Issued	Modifications: Const. Compl.	Modifications: As-Built Compl.	Modifications: DCNs Compl.
2.1.3.3.4	Description of analyses					100	100	100	50				
2.1.3.4	Design review												
2.1.3.4.1	Criteria eval.						100	100	50				
2.1.3.4.1.1	Visual inspect. and simplified analysis						100	100					
2.1.3.4.1.2	Detailed seismic analysis						100	100	50				
2.1.3.4.2	Modifications[15]						100	100	0	100	100	40	0
2.1.3.5	Analyses and modifications of modified Structure						95	95	50				
2.1.3.6	Fuel handling building crane				100	100	95	95	70				
--	Platforms[16]				100	100	30	20	20	20	0	0	0
2.1.4	Turbine building[17]												
2.1.4.2	Criteria				100								
2.1.4.3	Methodology					100							
2.1.4.3.1	Structures					100							
2.1.4.3.2	Models					100							

Table 1.1

DIABLO CANYON PROJECT.

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications				
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established: DCN	Methodology Established	Calc. Prep:	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.	
2.1.4.3.2.1	Horizontal					100								
2.1.4.3.2.2	Vertical					100								
2.1.4.3.2.3	Pedestal model					100								
2.1.4.3.3	Analyses description					100								
2.1.4.3.3.1	Review of analyses					100								
2.1.4.4	Design review													
2.1.4.4.1	Eval. to criteria						100	95	25					
2.1.4.4.2	Modifications						100	100	100	100	70	0	0	(Note)*
2.1.4.5	Analysis and qualification of structure[18]						100	80	20					
2.1.5	Intake structure													
2.1.5.1	Scope				100									
2.1.5.2	Criteria													
2.1.5.2.1	Loading combinations					100								
2.1.5.3	Methodology					100								
2.1.5.3.1	Description					100								
2.1.5.3.2	Seismic math. model					100								

* The Calc's have been approved for their technical validity, however final documentation and sign-off have not been completed.

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established					DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.
					DCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.				
2.1.5.3.3	Wave force model					100							
2.1.5.3.4	Seismic model properties					100							
2.1.5.6	Analysis of structure subjected to wave force[19]						100	100	100	100	100	100	0
2.1.5.7	Design review and qualifi-cation for structure												
2.1.5.7.1	Review procedure					100							
2.1.5.7.2	Review results						100	100	100				
2.1.5.7.3	Response spectra						100	100	100				
2.1.5.8	Intake structure crane[20]												
2.1.5 .8.2	Safety analysis						100	100	100				
2.1.5.8.3	Criteria				100								
2.1.5.8.5	Seismic model							100	100				
2.1.5.8.6	Description of analysis							100	100				
2.1.5.8.7	Results							100	100				

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established: DCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.
2.1.6	Outdoor storage tanks[21]												
2.1.6.2	Criteria				100								
2.1.6.3	Methodology												
2.1.6.3.1	Description					100							
2.1.6.3.2	Seismic math. model					100							
2.1.6.3.3	Seismic model properties					100							
2.1.6.3.4	Analytical methods					100							
2.1.6.4	Design review and qualification of tanks[29]												
2.1.6.4.1	Review of analysis						100	100	100				
2.1.6.4.2	Review of results						100	100	100				
2.4	Electrical conduit and raceway supports[22]												
2.4.2	Criteria												
2.4.2.1	Response acceleration of support systems				100								

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]				Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established				DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.
					DCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.				
2.4.2.2	Loading combination				100								
2.4.2.3	Acceptance criteria[23]				100								
2.4.3	Seismic resistance analysis												
2.4.3.1	Methodology												
2.4.3.1.1	Description of supports					100							
2.4.3.1.2	Transverse seismic analysis					100							
2.4.3.1.3	Longitudinal seismic analysis					100							
2.4.4	Verification of support locations[24]												
2.4.5	Design review												
2.4.5.1	Evaluation to criteria[25]						100	100	90				
2.4.5.2	Description of modifications[25]									95*	95	0	0
2.5	HVAC ducts and supports[26]												
2.5.2	Criteria												
2.5.2.1	Response acceleration of ductwork systems				100								

*Additional DCNs were issued as a result of criteria changes.

Table 1.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
CIVIL STRUCTURAL

Area		Design Review			Design Revision or Reanalysis[1]					Modifications			
Section	Description	Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established: OCM	Methodology Established	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.
2.5.2.2	Loading combinations[27]				100								
2.5.2.3	Acceptance criteria				100								
2.5.3	Methodology												
2.5.3.1	Description of ducts and supports					100							
2.5.3.2	Generic qualification					100							
2.5.3.3	Specific qualification					100							
2.5.4	Design review												
2.5.4.1	Evaluation to criteria[28]						100	100	75				
2.5.4.2	Description of modifications[28]									100	95	0	0

Notes:

1. This includes work required to make calculations consistent with as built as a result of other changes or to correct errors.
2. Scope of review is established. The design criteria for the dome service crane is in the final sign-off process. Platform d[illegible]criteria is being revised to address additional non-seismic related loadings.
3. Soil behavior for DE/DDE conditions is still being reviewed.
4. Calculations for interface between internals and base mat are being finalized.
5. Calculations for guide struts and rail capacity with comparison to seismic demand are being completed.

Notes:

6. An analysis to evaluate structural integrity is in progress.
7. Calculations evaluating the effect of pipe hanger loads on restraints are in progress.
8. Final piping and other loads are being reevaluated.
9. Scope of review for DE/DDE conditions is being evaluated as scope for other conditions is established. Design allowables and procedures for non-seismic loads are being evaluated.
10.
11.
12. Control room slab and other additional data points are in the review or approval process.
13. Horizontal diaphragm calculations are being reviewed. The vertical slab calculations are approved. The DE/DDE evaluation is in progress.
14. Scope is established.
15. Unit 1 is 100% complete in construction, and Unit 2 construction is about 50% complete. As-built of Unit 1 is 95% complete.
16. Scope is being evaluated.
17. Scope is established. Open items consist of (1) review of requirements associated with high energy line break, and (2) signoff of criteria for turbine building crane. Evaluation of structural steel beams is in progress.
18. Scope is established.
19. As-builts for vent nut modifications have been received and are being reviewed. As-builts for fillets have not been received.
20. Scope of review is established.
21. Scope of review is established.
22. Scope of review is established.
23. Tests are in progress to confirm design values used for conduit clamps and back-to-back Superstrut welding.
24. Location summary for each support is complete for Unit 1. Additions due to new installations are being received on an ongoing basis.
25. Revised response spectra are being received and review is in progress. Additional modifications may result.
26. Scope of review is established.
27. Review of requirements associated with high energy line break phenomenon is in progress.
28. Additional support design associated with HVAC system changes is in progress. Revised response spectra are being received and review is in progress. Additional modifications may result.
29. No construction is required.
30. DE/DDE soil structure interaction loads are being evaluated.
31. Supplemental report is required to account for the DE/DDE soil structure interaction.

2.1 Large Bore Piping

General - The Final Report Scope, Criteria and Methodology sections are complete and no changes are anticipated. Analyses and qualification of installations assigned to Westinghouse Corporation have been completed. All current criteria and design input data have been transmitted to Westinghouse. They have reviewed recent changes to certain input data and anticipate no further modifications to be required. This estimate includes iterations due to construction interface and as-built review. Table 2.1 tabulates the status of this information.

All large bore piping has been reviewed and qualified. However, certain calculations exist with inputs identified as preliminary or results which require review and acceptance. The notes to the table describe items which require closure of documentation and an assessment of each item's significance. These items should not be totaled as an indication of analyses with open items as many analyses contain more than a single item.

A small number of iterations of pipe analyses may also result from problems encountered during support design review and redesign associated with recently issued analyses and construction difficulties encountered during support or pipe modification.

Thirty-eight minor pipe modifications have been issued to date and construction has completed thirty-five.

Table 2.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS

LARGE BORE PIPING

Area Section	Area Description	Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established								As-Built		
		Criteria Review	Methodology Review	Calc. or Analyses Review	DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	Compl.	DCNs Compl.	
2.2.1	Large Bore Piping														
	o Pipe Stresses	100	100	100	100	100	100	100	100	100	100	92	85	0	2, 5, 6
	o Valve Qualification	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	7
	o Nozzle and Flued Head Loads	100	100	100	100	100	100	100	100	100	0	0	0	0	1, 4
	o Local Stress	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	3

Notes:

1. Nozzle Loads - Sixty-six analyses contain nozzle loads which require documentation of acceptance to current loads. Some additional analysis may result from this item.
2. Spectra - All analyses contain the proper current spectra with the exception of two. Spectra for these problems have been revised and the analysis are being rerun.
3. Local Stress Evaluation - Approximately thirty eight local stress evaluations are anticipated to close this item. Most evaluations are iterations to existing calculation caused by load changes and a few will be caused by new support design. Few if any design changes will result from this activity. These design changes would be issued as a part of large bore pipe stress modifications.
4. Flued Head Loads - Approximately 36 analyses contain containment penetration flued heads which remain to be qualified for revised analysis loads. No further modifications are expected.
5. Eight analyses are impacted by piping reroutes which are caused by SIP or construction interferences. Few pipe support modifications are expected.
6. A final walkdown is being performed to inspect pipe clearances and verify general piping configuration. Few modifications are anticipated.
7. One analysis contains a valve for which a support reaction remains to be qualified. No modification is expected.

2.2 Small Bore Piping

All small bore piping associated with both the Generic and Sample Programs has been reviewed and qualified with a few exceptions (Table 2.2) . In addition, certain calculations exist with inputs identified as preliminary or results which require review and acceptance by others. The notes to the table describe a listing of items which require closure of documentation or completion of a calculation activity. The significance of each item is addressed.

Some computer analyses may require revision due to possible future changes in input data such as spectra or header movements.

A small number of iterations of pipe analyses may also result from problems encountered during support design review and redesign associated with recently issued analyses and construction difficulties encountered during support or pipe modification.

Ten pipe modifications have been issued and construction is complete.

Table 2.2

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS

SMALL BORE PIPING

Area Section	Description	Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established										
		Criteria Review	Methodology Review	Calc. or Analyses Review	DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.	
2.2.2	Small Bore Piping														
	Generic Review														
	o Computer Seismically Analyzed Piping	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	1,2
	o Valve Qualification	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o SAM/TAM	100	100	100	100	100	100	100	100	100	100	0	0	0	
	o Code Boundaries	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Hot Piping	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	Sample Review														
	o As-Built Accuracy	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Revised Spectra	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Concentrated Masses	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Insulation Weight	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Overspans	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Anchor and Equipment Loads	100	100	100	100	100	100	100	100	100	100	0	0	0	
	o Equipment and Building SAM/TAM	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	

Table 2.2

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS

SMALL BORE PIPING

Area Section	Description	Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established										
		Criteria Review	Methodology Review	Calc. or Analyses Review	DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	As-Built Compl.	DCNs Compl.	
	o Thermal Analyses	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Valve Bypass	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Vents and Drains	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	

Notes: 1. Nozzle loads - Twenty-six nozzle loads require close out of documentation to show acceptance of those loads contained in the analyses.

2. Spectra - One analysis contains a response spectrum which has been revised.

2.3 Large Bore Supports

All large bore piping supports have been reviewed and qualified. However, iterations of piping analyses due to input data revision are causing support requalification and redesign (Table 2.3). Presently 1430 supports out of a total of 4300 require requalification due to piping analysis revision. The bulk of these supports are associated with decreased loads and movements and require only documentation changes. In addition the activities and items described in the notes must be completed to ensure no further calculation or design revision. For each item an assessment of significance is established.

1035 supports are in the construction process. 2600 are installed and are accepted through QC inspection and as-built preparation.

Table 2.3

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS

LARGE BORE SUPPORTS

Area		Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established								As-Built		
Section	Description	Criteria Review	Methodology Review	Calc. or Analyses Review	DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued	Const. Compl.	Compl.	DCNs Compl.	
2.2.3	Large Bore Supports														
	o Stress	100	100	100	100	100	100	100	100	100	98	76	62	16	1,2,3,4,5,6,7,8
	o Frequency	100	100	100	100	100	100	100	100	100	98	76	62	16	1,2,3,4,5,6,7,8
	o Base Plates	100	100	100	100	100	100	100	100	100	98	76	62	16	1,2,3,4,5,6,7,8
	o Modifications Due to Piping Reanalysis										98	76	62	16	1,2,3,4,5,6,7,8

Notes:

1. As-Builts - Reconciliation of as-builts to date has resulted in a redesign rate of 25%. Approximately 1500 as-built reconciliations are outstanding which is projected to cause 40 iterations to design. There are 350 as-builts required for fuel load.

2. Construction Difficulties - Presently, approximately 10% of the modified pipe supports require a design iteration to allow construction completion. Based on 1035 supports requiring construction completion, 104 support design changes are anticipated.

3. Civil Verification - Presently, approximately 1% of the support designs issued with increased loads require redesign or additional structural steel design to obtain civil approval of the loading on the structure. Approximately 20 additional modifications are anticipated to result from this activity.

4. Small Bore Support Loads - Approximately 30 supports require confirmation of the attached small bore support load. No modifications are anticipated.

5. Equipment Restraint - Confirmation of the acceptance of support attachments to the two RHR pumps is outstanding. No modification is anticipated.

6. Spectra Change Impact on S.I.P. - Changes to spectra have caused many Design Class II supports, which were modified for System Interaction with Design Class I installations, to be reviewed. This work is essentially complete but 12 more modifications are anticipated.

7. STRUDL - One version of the STRUDL program used for support qualification has been found to contain a few errors. The errors have been corrected and program reverification completed. Reviews performed to date indicate that support qualification conclusions are unaffected. More reviews and recalculation are required to close this issue, but no design changes are anticipated.

8. Engineering Judgement - 270 supports require review for piping analysis qualified by engineering judgement.

2.4 Small Bore Pipe Supports

All small bore supports associated with both the Generic and Sample programs have been reviewed and qualified (Table 2.4). However, iterations of piping analyses due to input revisions and changes to spectra and temperatures and operating modes are causing support review and redesign. Presently, approximately 49 supports out of 2500 require requalification due to these changes. Very few modifications are expected to result from this effort. In addition, support qualification/design iterations will occur as described in the notes to the table. The significance of each item is addressed.

One hundred fifty supports are in the construction process. 1500 are installed.

Table 2.4

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS

SMALL BORE PIPE SUPPORTS

Area Section	Area Description	Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established										
		Criteria Review	Methodology Review	Calc. or Analyses Review	DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	Design Changes Issued	Const. Compl.	As-Built Compl.	Design Changes Accepted	
2.2.2	Small Bore Supports														
	Generic Review														
	o Standard Supports	100	100	100	100	100	100	100	100	100	100	90	79	24	
	o SAM/TAM	100	100	100	100	100	100	100	100	100	100	90	79	24	1,2
	o Code Boundaries	100	100	100	100	100	100	100	100	100	100	90	79	24	1 2
	o Lugs	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Large Bore Piping Review	100	100	100	100	100	100	100	100	100	100	90	79	24	1 2,3
	Sample Review														
	o As-Built Accuracy	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Revised Spectra	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Concentrated Masses	100	100	100	100	100	100	100	100	100	100	90	79	24	1 2,4
	o Insulation Height	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Overspans	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Equipment and Building SAM/TAM	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	1,2,5
	o Thermal Loads	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	
	o Vents and Drains	100	100	100	100	100	100	100	100	100	100	90	79	24	1,2,4
	o Anchor and Equipment Loads	100	100	100	100	100	100	100	100	100	N/A	N/A	N/A	N/A	

Notes:

1. As-Builts - Reconciliation of as-builts to date has resulted in a redesign rate of 2%. Approximately 800 as-built reconciliation are outstanding which is projected to cause 16 iterations to design.
2. Construction Difficulties - Presently, approximately 2-1/2% of the modified pipe supports require a design iteration to allow construction completion. Based on 150 supports outstanding in construction, 4 support design changes are anticipated.
3. Approximately 30 pipe supports require review for revised Large Bore analysis.
4. For these issues expanded investigation was required.

SECTION 3. EQUIPMENT SEISMIC DESIGN

The status of the equipment seismic design work is presented in the following. This includes Mechanical Equipment, Electrical Equipment and Instruments, and Heating, Ventilating, and Air Conditioning (HVAC) Equipment.

3.1 Mechanical Equipment

The scope, criteria, and methodology phases of the program are 100% complete. For 100% of the mechanical equipment, calculations which determine if the equipment is seismically qualified for a given set of controlled seismic input have been competed (See Table 3-1).

3.2 Instrumentation and Controls

The I&C work consists of selected analysis, design, and construction activities. The status for all I and C equipment is presented in Table 3-1.

For the analysis work completion means, the equipment qualification levels have been compared to the appropriate required response spectra and have been found acceptable. Some final documentation may be outstanding.

Design work is complete when the DCN has been issued by engineering for modifications to bring equipment up to the qualified configuration.

Construction work is complete when all equipment modifications have been completed by General Construction. Some final documentation may be outstanding.

For Instrument tubing supports the analyses are complete as of March 29, 1983 (Rev. 6 of DCM C-17), and the design and construction resulting from these analyses are complete.

3.3 Electrical Equipment

Activities relating to Phase I are complete. Responses have been provided to all RFIs and EOIs.

Section 2.3.2 of the Phase I Final Report provides the detailed information for the Class IE electrical equipment.

3.4 HVAC Equipment

The review of seismic qualification of Class I HVAC equipment has been completed as of August 16, 1983. This is based upon the application of seismic spectra issued for project use. Table 3.1 tabulates the percent completeness of major steps of the related work.

The seismic qualification of HVAC equipment is an ongoing process in which the analyses will be updated as new input are generated in accordance with PEI-13 and DCM CH-52.

Table 3.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
EQUIPMENT SEISMIC DESIGN

Area		Design Review			Design Revision or Reanalysis						Modifications				Notes
Section	Description	Criteria Reviewed	Methodology Reviewed	Calc. or Analyses Reviewed	Criteria Clarified and Methodology Established						DCNs Issued (%)	Const. Compl.	As-Built Compl.	DCNs Compl.	
					DCM Prep.	DCM Appr.	Methodology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.					
2.3.1	Mechanical Equipment(1)	(See attachment: Table 2.3.1-1)													
2.3.1.2	Criteria(2)				100	100									
2.3.1.3	Methodology(3)						100								
2.3.2	Instrumentation														
	o Hot shutdown panel	100	100	100											
	o Instruments (panels PIA & PIB)	100	100	100											
	o Local instrument panels	100	100	100							100	50	0	0	Not
	o Limit switches	100	100	100											
	o Pressure and pressure change transmitters	100	100	100											
	o Solenoid valves	100	100	100											
	o PAM Panels and instruments	100	100	100											
	o Containment Hz monitors	100	100	100											
	o Containment radiation high range detectors	100	100	100							100	0	0	0	Note
	o Control room air supply chlorine detector	100	100	100											
	o Plant vent radiation monitor	100	100	100							100	100	100	100	No

Table 3.1

DIABLO CANYON PROJECT

PHASE I CORRECTIVE ACTION PROGRAM STATUS
EQUIPMENT SEISMIC DESIGN

Area Section	Area Description	Design Review			Design Revision or Reanalysis						Modifications				Notes
					Criteria Clarified and Methodology Established										
		Criteria Reviewed	Method-ology Reviewed	Calc. or Analyses Reviewed	DCM Prep.	DCM Appr.	Method-ology Estab.	Calc. Prep.	Calc. Check.	Calc. Appr.	DCNs Issued (%)	Const. Compl.	As-Built Compl.	DCNs Compl.	
	o Control room press. radiation monitor(4)	100	100	75							100				
	o Control room press. Chlorine monitor(4)	100	100	75							100				
	o Control room air supply rad. monitor	100	100	100											
	o Pressurizer SRV Pos. Indicator	100	100	100											
	o Sub-cooled margin monitor	100	100	100											
	o Process solenoid valves	100	100	100											
2.3.2	Electrical Equipment(1)	100	100	100	100	100	100	100	100	100	100	100	60	60	See Note 7.
2.3.3	HVAC Equip-ment	100	100	100(8)	100	95(9)					75	5	0	0	

Notes:

1. Scope of this work is defined and complete. The methodology phases of the program are 100% complete.
2. Complete defined as the issue of a controlled document which defines appropriate criteria which includes load combinations, seismic input, damping values and allowable stresses.
3. Complete is defined as the issue of a formal document which describes an appropriate methodology to be employed.
4. Devices will be relocated due to high RRS at Elev. 190'. Devices have been tested to test machine limits.
5. Design modification is the result of new annulus spectra.
6. Design modification is the result of equipment upgrade not design verification.

Notes: 7. Spectra for the turbine building at elevation 190 ft are not available at this time. Equipment has been tested to shake table limits. Equipment located in the turbine building at elevation 104 ft and above is qualified based on preliminary spectra available.

8. Duct-monitor HVAC equipment analyzed is 95% complete.

9. Issuance of design changes is about 75% complete, and construction is approximately 5% complete.

TABLE 2.3.1.1-1
MECHANICAL EQUIPMENT SEISMIC
QUALIFICATION RESULTS

8/12/83

Equipment	Location: Building/ Elevation	Required Qualification "g" Level H_{N-S}	H_{E-W}	V	Qualification Method	Qualifying Spectra HE, DDE, DE	Damping Value Used	Physical Modifications Required? Yes/No	Notes Reference
Feedwater System									
AFW Pump and Motor	Aux/100	0.30	0.35	0.24	A	DE	R	No	A
		0.60	0.70	0.48		DDE	R		
		0.85	0.96	0.56		HE	R		
AFW Pump (Turbine-driven)	Aux/100	0.28	0.46	0.31	A	DE	R	No	A
		0.56	0.92	0.62		DDE	R		
		0.96	0.79	0.58		HE	R		
AFW Pump Turbine	Aux/100	0.28	0.46	0.31	A	DE	R	No	A
		0.56	0.92	0.62		DDE	R		
		0.96	0.79	0.58		HE	R		
CVC System									
Boric Acid Tank	Aux/115	0.69	0.83	0.13	A	DE	2%	No	A
		1.38	1.65	0.26		DDE	2%		
		2.69	2.60	0.96		HE	4%		
Safety Injection System									
SI Pump Lube Oil Filter	Aux/85	1.0	1.0	0.65	A	DE	R	No	A
		1.0	1.0	0.65		DDE	R		
		1.0	1.0	0.65		HE	R		

KEY: A - Qualified to latest spectra & nozzle load
B - Currently high nozzle load. Anticipate will be resolved by further analysis.
C - Design change in progress.
D - Currently high nozzle loads. Anticipated that support modifications will be required.

Equipment	Location: Building/ Elevation	Required Qualification "g" Level H_{N-S}	H_{E-W}	V	Qualification Method	Qualifying Spectra HE, DDE, DE	Damping Value Used	Physical Modifications Required? Yes/No	Notes Reference
Component Cooling System									
CCW Pump	Aux/73	0.2	0.2	0.13	A	DE	R	No	C
		0.4	0.4	0.27		DDE	R		
		0.63	0.63	0.5		HE	R		
CCW Pump Motor	Aux/73	0.2	0.2	0.13	A	DE	R	No	A
		0.4	0.4	0.27		DDE	R		
		0.63	0.63	0.5		HE	R		
Containment Fan Cooler Box	Cont/140	0.8	0.8	0.54	A	DE	R	No	A
		1.25	1.25	0.84		DDE	R		
		1.7	1.7	1.97		HE	R		
Gaseous Radwaste System									
Waste Gas Compressor	Aux/60	0.2	0.2	0.13	A	DE	R	No	A
Waste Gas Moisture Separator	Aux/60	0.2	0.2	0.13	A	DE	R	No	A
Waste Gas Decay Tank	Aux/60	0.2	0.2	0.13	A	DE	R	No	A

Equipment	Location: Building/ Elevation	Required Qualification "g" Level H_{N-S}	H_{E-W}	V	Qualification Method	Qualifying Spectra HE, DDE, DE	Damping Value Used	Physical Modifications Required? Yes/No	Notes Reference
Diesel Generator System									
Diesel Generator	Turb/85	0.41	0.41	0.27	A	DE	2%	No	D
		0.81	0.81	0.54		DDE	2%		
		1.10	1.10	0.92		HE	4%		
Diesel Transfer Pump and Motor	MSS/77	0.2	0.2	0.13	A	DE	R	No	A
		0.4	0.4	0.27		DDE	R		
		0.54	0.54	0.50		HE	R		
Diesel Generator Lube Oil Filter	Turb/85	1.25	1.25	0.83	A	DE	1%	No	A
		2.50	2.50	1.67		DDE	1%		
		1.90	1.90	1.50		HE	4%		
Diesel Transfer Filter	MSS/77	0.2	0.2	0.13	A	DE	R	No	B
		0.4	0.4	0.27		DDE	R		
		0.54	0.54	0.50		HE	R		
Diesel Transfer Strainer	MSS/77	0.2	0.2	0.13	A	DE	R	No	
		0.4	0.4	0.27		DDE	R		
		0.54	0.54	0.50		HE	R		
Priming Tank	Turb/85	0.20	0.20	0.13	A	DE	R		A
		0.40	0.40	0.27		DDE	R		
		0.54	0.54	0.50		HE	R		
Starting Air Receiver	Turb/85	0.20	0.20	0.13	A	DE	2%	No	A
		0.40	0.40	0.27		DDE	2%		
		0.85	0.85	0.50		HE	4%		
Ventilation System									
Containment H_2 Purge Supply Filters	Aux/100	0.34	0.30	0.13	A	DE	R	No	A
		0.68	0.60	0.27		DDE	R		
		0.86	0.91	0.60		HE	R		
Containment H_2 Purge Exhaust Filters	Aux/115	0.37	0.5	0.13	A	DE	R	No	B
		0.737	1.0	0.27		DDE	R		
		0.96	1.4	0.60		HE			
Containment H_2 Supply and Exhaust Blowers and Motors	Aux/115	1.92	1.6	0.74	T	DE	R	No	A
		3.81	3.2	1.47		DDE	R		
		2.94	3.01	1.50		HE	R		

Equipment	Location: Building/ Elevation	Required Qualification "g" Level H_{N-S}	H_{E-W}	V	Qualification Method	Qualifying Spectra HE, DDE, DE	Damping Value Used	Physical Modifications Required? Yes/No	Notes Reference
CCW Heat Exchanger	Turb/85	0.48	0.20	0.134	A	DE	2%	Yes	C
		0.96	0.40	0.27		DDE	2%		
		0.98	0.61	0.50		HE	4%		
CCW Surge Tank	Aux/163	0.90	0.58	0.17	A	DE	R	No	A
		1.79	1.16	0.33		DDE	R		
		2.26	2.27	1.2		HE	R		
CCW Pump Lube Oil Cooler	Aux/73	0.2	0.2	0.13	A	DE	R	No	A
		0.4	0.4	0.27		DDE	R		
		0.63	0.63	0.50		HE	R		
Makeup Water System									
Makeup Water Transfer Pump and Motor	Aux/100	0.31	0.30	0.13	A	DE	R	No	A
		0.61	0.60	0.27		DDE	R		
		0.85	0.75	0.60		HE	R		
Saltwater System									
ASW Pump and Motor	Intake/-2	0.39	0.35	0.26	A	DE	R	No	3 A
		0.78	0.70	0.52		DDE	R		
		1.030	1.013	0.55		HE	4%		
Fire Protection System									
Fire Pump	Aux/115	0.39	0.35	0.26	A	DE	R	No	A
		0.78	0.70	0.52		DDE	R		
		1.03	1.013	0.55		HE	R		
Fire Pump Motor	Aux/115	0.39	0.35	0.26	A	DE	R	No	A
		0.78	0.70	0.52		DDE	R		
		1.030	1.013	0.55		HE	R		
Portable Fire Pump (diesel)	MSS/85	0.2	0.2	0.13	T	DE	R	No	A
		0.4	0.4	0.27		DDE	R		
		0.54	0.54	0.50		HE	R		

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where necessary to assess the effects of various DCP assumptions and calculations. For the auxilliary building, the IDVP performed separate analyses, such as sensitivity studies for the dynamic models, to assess the significance of modeling parameters.

Two EOIs were written as a result of the IDVP verification:

EOI 1124 was issued for the finite element modeling of the control room floor slab. The location of the supporting walls in the model did not match the actual locations. This model was used to generate Hosgri floor response spectra. The DCP has corrected this error. The IDVP then verified that slab qualification analyses for vertical loading were acceptable. This EOI was classified as a Class B Error, and the error resolved by verification of the DCP reanalysis.

EOI 1132 was issued because the Auxiliary Building DCP member evaluations had been reported as being complete. This file was combined with EOI 1097. The DCP is still in the process of evaluating the slabs for in-plane loads, and this effort is subject to further verification.

The verification program intended to be conducted by the IDVP is not yet completed. Based upon the efforts performed to June 25, 1983, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria:

- Qualification analyses reflect the as-built structure.
- Accidental eccentricities for the concrete portions were applied properly.
- The synthetic time-histories used for analyses give an acceptable representation of the smooth design spectra.

4.4.3 Fuel Handling Building

The Fuel Handling Building (FHB) is a Design Class I steel-framed structure which is supported at elevation 140 feet of the auxiliary building. The building dimensions are 58 feet (E-W direction) by 366 feet (N-S direction) by 48 feet high. It supports a fuel handling bridge crane and houses other equipment. Moment-resisting steel frames in the East-West direction and cross-braced columns in the North-South direction comprise the structural system. The roof is a trussed and cross-braced diaphragm covered with metal decking and built-up roofing. A portion of the end frames in the East-West direction are supported on a concrete wall common with the fan rooms.

In accordance with the FSAR and Hosgri report, Design Class I structures must be qualified for all seismic events; thus, member evaluation for the structural steel members was performed for the DE, DDE, and Hosgri events and the required loading combinations.

4.4.3.1 Verification of Corrective Action

The IDVP verification of the DCP Corrective Action Program for the FHB is defined in ITRs-8 and -35. The IDVP verification consisted of examining on a sampling basis the analyses for both seismic and non-seismic loads. The seismic loads are the DE, DDE, and Hosgri events, while the non-siesmic loads are dead, live, wind, temperature, etc. The IDVP will perform a field inspection of the FHB when modifications are complete. Connections, additional members and/or removed members, etc., will be examined and checked for conformance with the design and qualification analyses. ITR-57 reports on the IDVP verification of the FHB.

The DCP conducted its evaluation of the criteria implementation and qualification analyses through the Internal Technical Program (ITP).

- Time history analyses (Hosgri) of the dynamic models which produced response spectra and provided accelerations for use in the equivalent static model. The input time history from elevation 140 feet of the auxiliary building was also reviewed.

- Evaluation of the nodal accelerations used to determine equivalent static loads.

- Computation of loads for the equivalent static analysis and a sample of the computer runs for a static analysis load case.

- Comparison of selected member loads with member allowables loads for the postulated Hosgri event.

The selected sample covers approximately 50% of the structure dynamic analyses, excluding the crane, and the same percentage for the static analysis and member evaluation. The IDVP did not review the preliminary static model, which was used by the DCP as a basis for determining analysis and modification requirements.

No EOIs were issued for the FHB with regard to the DCP Corrective Action Program.

The verification program intended to be conducted by the IDVP is complete except that the as-built condition will be field verified against the design drawings used as the basis for the analyses. Based upon the efforts performed to August 19, 1983, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria:

- Omission of an allowance for accidental eccentricity in the FHB because the torsional effects are accounted for in the auxiliary building response at elevation 140 feet.
- The ranges of crane locations and assessment of their effects upon results.
- The dynamic models used in the FHB evaluation.
- Response spectra generation.
- Equivalent static loads determined from the dynamic acceleration profiles.
- Qualification of members and connections.

The IDVP intends to formulate final conclusions as to the qualification of the FHB and conformance to licensing criteria when the DCP modifications and field walkdown have been completed and the IDVP has verified the as-built against the design conditions. This verification will be reported in Revision 1 to ITR-57. EOI 1092 will not be closed until this field verification is complete.

(To Be Supplemented)

The review of the PGandE model resulted in two areas of concern. The first had to do with the frame consolidation used to obtain the equivalent radial beam flexural rigidity properties. The IDVP concluded that the frame consolidation does not adequately represent the structure at elevations 101 and 106 feet.

The second concern was that the PGandE model does not consider the possible effects of tangential beam flexibility on local response spectra. The IDVP studies included simple one and two degrees-of-freedom lumped mass models which confirmed that the tangential beam flexibility is an important factor in the response spectra generation.

The results and conclusions of the verification review of the containment annulus has been reported in ITR-50. The conclusions relative to the specfic concerns of the NRC letter are:

- There are no significant differences in the computed masses and member joints (with the exception of the BNL error in the slab to crane wall connection mentioned) between the 1981/1982 URS/Blume analyses and BNL (Model B) analysis.

- The joint characteristics in the Blume analysis realistically represent the as-built configuration.

- The spectra smoothing technique applied by PGandE is consistent with the DCNPP licensing criteria.

- The issue of discrepancies between design piping analyses and the as-built configurations is a generic concern that has been identified by the IDVP and is discussed in 4.5.2.

- The significance of the errors in the modeling of bends in annulus structure piping is considered negligible.

4.4.6 Intake Structure

The intake structure is a massive Design Class II concrete structure that houses the Design Class I Auxiliary Saltwater (ASW) Pumps. The vent shaft and snorkel pipes, as well as nearby supporting equipment, are part of the ASW system. The dynamic analysis of the Intake Structure produces response spectra used as input to these systems.

In accordance with the FSAR, a Design Class II structure is required to retain its integrity during a seismic event so that the function of Class I equipment will not be impaired. Hence, the DCP has evaluated the structural integrity of the intake structure for the postulated Hosgri event, but floor response spectra used for evaluation of safety-related equipment have been computed for DE, DDE and Hosgri conditions.

4.4.6.1 Verification of Corrective Action

The IDVP verification of the DCP Corrective Action Program for the intake structure is defined in ITRs-8 and -35. The IDVP review consisted of examining the qualification of the structure for seismic and non-seismic loads. The seismic loads are the DE, DDE, and Hosgri events, while the non-seismic loads are soil bearing pressures, hydrodynamic, wave force, dead and live load, and missile loads. ITR-58 reports the IDVP verification of corrective action for the intake structure.

The DCP reviewed the as-built drawings to ensure an accurate input to the analysis and made modifications as necessary, as detailed in the PGandE Phase I Final Report. For the intake structure, the DCP reviewed and accepted the dynamic analysis, member evaluation, generation of response spectra, and structural stability calculations performed by URS/John Blume Associates. In addition, the Blume Internal

- The flow straighteners possessed adequate strength using the ductility criteria specified. Walls and slabs were qualified without the use of ductility considerations.

- Vent shaft system was shown to be adequate.

As noted by the above statements and by consideration of the DCP qualification analyses, the IDVP considers the intake structure to be qualified and to meet licensing requirements. The sliding, overturning and soil bearing pressure calculations are under continuing review as discussed in 4.9.2, and will be reported in ITR-68 and in Revision 1 to ITR-58.

(To Be Supplemented)

reviews, specific areas of interest were chosen for reviews. These specific areas included items such as valve modeling and qualification, application of stress intensification factor, spectra inputs, etc. Alternate calculations were performed by the IDVP as necessary to review DCP calculations.

As a result of the above-described activity, four EOIs were issued. EOI 1126 addresses the SIF discrepancy for intermediate butt welds and the omission of a SIF of 1.9 at valve/elbow interfaces. This item has been incorporated into the DCP final review checklist for review of potential impacts on all DCP analyses, and the file has been closed.

EOI 1133 addresses the discrepancy noted for one DCP valve model where only two-thirds of the required eccentric mass was considered in the DCP analysis. This item has been determined to be a Class C Error and has been resolved through revision of the DCP analysis.

EOI 1135 addresses the discrepancies in valve body and operator weights for valves LCV-113 and -115. This item has been determined to be a Class C Error and resolved through revision of DCP analysis.

EOI 1137 addresses a discrepancy in valve weight for FCV-365. This EOI together with EOIs 1133 and 1135 combined to form a generic concern with valve modeling. The item has been incorporated into the DCP Final Review checklist for review of potential impacts on all DCP analyses. The concern of EOI 1137 was determined to be a Class C Error.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts

performed to August 15, 1983, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria.

- The DCP reanalysis of all original work and the development of the DCP final review checklist is an appropriate program for qualification of all DCP analyses.
- Qualification analyses in general reflect the as-built conditions.
- Overall modeling methods were found acceptable, except for application of stress intensification factors (SIF) and valve modeling as noted above.
- Loadings used in the DCP analyses were found acceptable. Loading data were found properly controlled and applied by the DCP.
- Internal documentation was found to be in sufficient detail to allow the verification of transfer of data. Computer files and descriptions were indexed.
- Stress analyses were found acceptable for all reviewed analyses except Analyses 2-111, Revision 0, and 4A-100, Revision 0, which contained unique discrepancies and were reanalyzed by the DCP.
- Numerical accuracy of the calculations sampled was adequate.

In summary, the IDVP concluded that DCP is following established procedures and licensing criteria, and is meeting the latest loading criteria and operating modes. The concerns on stress intensification factors and valve modeling were determined to be generic concerns. These

generic concerns are resolved by the inclusion of specific checks in the DCP final review checklist. Certain valve models and SIFs will be reviewed by the IDVP after they have passed the DCP final review. None of the specific concerns that led to these two generic concerns caused an exceedence of the licensing criteria. The DCP Corrective Action Program for Design Class 1 large bore piping adequately covers all essential steps required to obtain proper qualification of the piping.

The IDVP intends to formulate a final conclusion as to the qualification of large bore piping and its conformance to licensing criteria when the IDVP verification is completed.

(To Be Supplemented)

b. Large Bore Piping Supports

The IDVP verification of the DCP Corrective Action Program for large bore pipe supports is defined in ITRs -8 and -35. The IDVP review consisted of an examination of qualification of each pipe support for all seismic and non-seismic loads. Seismic loads are the DE, DDE, and Hosgri events, while non-seismic loads are deadload, thermal accident, friction, fast valve closure, and relief valve opening thrust. This activity will be reported in ITR-60.

criteria and accuracy of calculations. The process by which the IDVP selected support samples included the following:

- In general, the selected supports were associated with piping that was part of the IDVP large bore piping sample.
- Several supports were selected as a result of IDVP field verification activities for piping samples.
- The DCP General Pipe Support Status (GPSS) log was reviewed to determine revision status, respective piping analyses, etc. This status log listed approximately 6000 to 7000 supports.
- Supports were selected to represent various support types, pipe sizes, plant locations, and organizations (consultants) performing design analyses.

The IDVP selected a total of 22 support analyses for review. The support types were as follows:

- 3 snubbers
- 6 spring hangers
- 6 anchors
- 7 rigid supports

The IDVP performed design reviews for the selected DCP analyses to verify the following aspects of the design analysis:

performed a finite element analysis which applied the piping spectra to this support and demonstrated that criteria were satisfied. The IDVP has verified this analysis and EOI 1122 was resolved as a Deviation. The IDVP does not consider it a generic concern.

EOI 1129 notes that errors were made in calculating the weld stress for a 1/4-inch weld between pipe lug and supporting steel on Pipe Support 56S/3A. These errors offset each other and no overstress occurred. This item has been classified as an error Class C. This EOI does not represent a generic concern.

EOI 1131 notes that the design analyses for Pipe Supports 58S/16V and 63/26V do not evaluate the shear lugs and attachment welds, as required in the DCP Corrective Action Program. The DCP has revised these analyses to include the shear lugs and attachment welds. The IDVP review of the revised DCP calculations shows these stresses to be small. This EOI has been classified as a deviation.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts performed to June 25, 1983, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria.

- Support drawings are satisfactory.
- Loads and load combinations used in the pipe support analyses are correct.
- Pipe support frequencies are satisfactory (except as noted in EOI 1122).

A design review checklist was developed for the IDVP review to ensure that all necessary items were examined and documented. Checklist observations were further expanded with comments where clarification or more detailed consideration was appropriate. In addition to the checklist, the IDVP design review included asessments of the completeness, applicability, and consistency of the DCP review and reanalysis methodology.

The IDVP performed an analysis package and pipe support review to evaluate the completeness of all pertinent design input data, output results and associated documentation.

Alternate calculations were performed by the IDVP, where necessary, to assess the effects of various DCP assumptions and to confirm calculations.

The IDVP selected a sample of 8 DCP small bore pipe support analyses to ensure conformance to DCP criteria and accuracy of calculations. The selection process included the following:

- The DCP list of small bore supports that comprised the full DCP review sample (approximately 210 supports) was reviewed by the IDVP.

- Supports were selected to represent various support types, pipe sizes, plant locations, and organizations (consultants) performing design analyses.

- In general, the selected supports were associated with piping that was part of the IDVP small bore piping sample.

- Several supports were selected as a result of IDVP field verification activities for piping samples.

One EOI report was issued. EOI 1039 was classified as a Class C error because of an error in the DCP support deflection evaluation. The DCP revised their analysis to show support met criteria.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts performed to August 19, 1983, the IDVP considers the following aspects of the DCP work to be acceptable:

- The small bore pipe supports analyzed by the DCP adequately represent the worst cases for the issues/design considerations determined by their generic and sampling reviews.

- Support drawings are satisfactory.

- Pipe support drawings and information used in the analyses reflect the as-built conditions.

- Loads and load combinations used in the pipe support analyses are correct.

- Standard component supports such as spring hangers, snubbers, and pipe clamps are satisfactory.

- All eight analyses meet criteria.

The IDVP intends to formulate a final conclusion as to the qualification of small bore pipe supports and their conformance to licensing criteria when the IDVP verification has been completed.

(To Be Supplemented)

4.6.2.2 Verification of DCP Activities

The IDVP verification of DCP work on tanks is defined by ITRs -8 and -35. The IDVP verification of the DCP work includes all aspects described in Section 4.6.1 and the following aspects were emphasized:

- Verification of the PGandE review methodology to assure that the correct spectra were checked by PGandE against qualification analyses.

- Completeness of qualification

The results of the verification have been reported in ITR-67.

The DCP Internal Technical Program for equipment consisted of a review of the seismic qualification, implemented by checking the latest seismic qualification data against those used for the qualification of equipment. This check used the latest response spectra for the DE, DDE, and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, the equipment was requalified by analysis or testing. Equipment identified for review was that associated with the engineered safety systems designed by PGandE (Reference PGandE Phase I Final Report).

The CCW surge tank was selected as the IDVP verification sample of the DCP implementation. The CCW surge tank is a Design Class I tank and is located atop the auxiliary building at elevation 163 feet. This tank is classified and built to ASME Section VIII (Rules for Construction of Pressure Vessels). This is one of five mechanical tanks reviewed by the DCP. Of the five, three were verified for Hosgri loadings as part of the initial sample. Of the two remaining tanks, only the CCW surge tank was required to be evaluated for both DE and DDE loadings.

The IDVP performed a design review for the DCP reanalysis. A checklist was developed which covered all required criteria items, and critical analytical procedures, and ensured completeness of the IDVP review. In addition to the checklist, the IDVP review included assessments of the completeness, applicability, consistency, and adequacy of the DCP review and reanalysis methodology. Where discrepancies were noted, or methodology was deemed not totally appropriate, alternate calculations were carried out by the IDVP to verify the conclusions of the DCP reanalysis.

The IDVP issued EOI 1136 which noted that the DCP analysis for the CCW surge tank calculated bolt shear stress allowables that did not conform to established DCP criteria and the ASME code. However, the bolt stresses remain below the correct allowable values. The DCP analysis also did not consider internal pressure induced stress in the tank for the evaluation of tank stresses at the nozzle. Tank stresses would exceed the specified allowable stress if pressure was considered using the same values and procedures as the DCP analysis. However, it was determined that the DCP reanalysis was very conservative and the actual pressure stresses were negligible. Thus, actual total stresses were below criteria and EOI 1136 was determined to be a Class C Error.

The technical aspects of the verification program conducted by the IDVP has been completed and reported in ITR-67. Based upon these efforts, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria:

- The seismic spectra utilized by the DCP for tanks reflects the current spectra.
- The mathematical modeling used in the reanalysis was considered to be acceptable.

- All established DCP criteria are considered to have been adequately met.

The items identified in EOI 1136 are considered to be random analytical discrepancies.

The IDVP intends to formulate a final conclusion as to the qualification of all mechanical equipment and its conformance to licensing criteria when all IDVP verification work in this area is complete. Effects of future revisions to seismic spectra and piping nozzle loads on equipment remain to be evaluated as part of the IDVP completion sample.

(To Be Supplemented)

The one observation, EOI File 950, was the result of a discrepancy in stiffener plate thickness determined from the field verification. Although the IDVP did not consider physical modifications of FCV-95 to be necessary to satisfy criteria, the DCP modified all valves specified in DCO-G-M-876 by replacing a 3/8" thick plate with a plate of the 1/2" design thickness. The IDVP verified these modifications.

No additional sampling or verification of valves was required.

4.6.3.2 Verification of DCP Activities

The IDVP performed verification of DCP activities for Valves in accordance with ITRs-8 and -35. The IDVP examined the DCP work for all aspects discussed in Section 4.6.1. The results of this verification have been reported in ITR-67.

The DCP Internal Technical Program (ITP) for Valves is closely tied to the DCP efforts for piping. Certain valves were selected by the DCP for reanalysis to determine valve natural frequencies and allowable accelerations. These valves had been originally qualified by seismic service-related contractors to PGandE. Only motor-operated valves with eccentric masses were reanalyzed. The allowable acceleration results were then used by piping to determine if modifications to the valve or pipe supporting structure were required.

Electro-Hydraulic Valve LCV-110 was selected as the IDVP verification sample. The valve is a Design Class I level control valve located on the pipeway structure outside the containment building. LCV-110 is one of the 6 different types of valves analyzed as part of the DCP's ITP.

LCV-110 is one of four similar valves: LCV-110, 111, 113 and 115. This type of valve was selected for the IDVP review sample because a similar valve had caused an overstress condition in the pipe line in

one of the IDVP initial sample piping analyses (Reference EOI 1069). In addition, the actuator motor on these valves had been replaced.

The IDVP performed a design review of DCP reanalysis. A checklist was developed which covered all criteria items, critical analytical procedures, and completeness of the DCP reanalysis. In addition to the checklist, the IDVP design review included reviewer assessments on the completeness, applicability, consistency and adequacy of the DCP reanalysis methods. Where discrepancies were noted, or methods deemed not totally appropriate, alternate calculations were carried out by the IDVP to verify the conclusions of the DCP reanalysis.

Actual piping accelerations as well as any additional valve support bracing were not included in this portion of the review because the results of this DCP reanalysis are to be used as criteria for the piping system qualification.

No EOIs have been issued in this review area to date.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts performed to August 15, 1983, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria.

- The methods and results of the reanalysis comply with the established DCP criteria.
- Mathematical modeling of the valve adequately represents the structure of the valve.
- Critical areas were examined.

The IDVP considers the following aspects of the DCP work to be unresolved concerns at this time.

- Resolution of the appropriate allowable stress criteria applicable to valve bolting.

The IDVP intends to formulate a final conclusion as to the qualification of and its conformance to licensing criteria when the IDVP verification is complete.

(To Be Supplemented)

4.6.4.3 Verification of DCP Activities

The IDVP verification of DCP activities for Pumps is defined by ITRs -8 and -35. The IDVP review examines the DCP work for all aspects described in Section 4.6.1 above. The results of this verification have been reported in ITR-67.

The DCP Internal Technical Program for Equipment consisted of a review of the seismic qualification. This review consisted of checking the latest seismic qualification data against those used for the qualification of equipment. This checking was performed using the latest response spectra for the DE, DDE, and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, the equipment was requalified by analysis or testing. Equipment identified for review consisted of those associated with the engineering safety systems designed by PGandE (Reference DCP Phase I Final Report).

Two identical fire pumps located in the Unit I Auxiliary Building at elevation 115 feet were selected as the IDVP verification sample. The fire pumps are Design Class I equipment.

This pump is one of eight pumps reviewed by the DCP. Of these eight, one was qualified by shake table testing (see Section 4.9.1) and is thus excluded from the sampling of reviewed/reanalyzed pumps. Five of the remaining seven pumps were included in the IDVP initial sample and additonal verification work. Thus, with the IDVP review of the fire pump, six of the seven pumps qualified by analysis and in the IDVP scope have been verified.

The IDVP verification included assessments of the completeness, applicability, consistency, and adequacy of the DCP review and reanalysis methodology. Where discrepancies were noted, or methodology deemed not totally appropriate, alternate calculations

were carried out by the IDVP to verify the conclusions of the DCP re-analysis.

EOI 1140 was issued in connection with the fire pump and identified two concerns regarding the discharge nozzle flanged joint. The first concern, relative to bolt stresses was resolved as a closed item after further evaluation. The second concern, which involved a non-conformance of the installed flange configuration with PGandE piping specifications, resulted in an Error Class C.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts performed to August 15, 1983, the IDVP considers the following aspects of the DCP work to be acceptable:

- Operability, as defined by rotating element clearances and interfereces, was adequately demonstrated.
- The seismic spectra utilized by the DCP for pumps reflects the current spectra.
- The mathematical modeling used in the reanalysis was judged to be acceptable for the fire pump.
- With the exception of the item identified in the next paragraph all established DCP criteria are judged to have been adequately met.

The IDVP considers the following aspects of the DCP work to be unresolved concerns at this time.

- Flanges on pumps require reevaluation relating to the appropriate allowable stress values to be used for the cast iron fire pump.

The IDVP intends to formulate a final conclusion as to the qualification of pumps and their conformance to licensing criteria when the IDVP verification has been completed.

(To be supplemented)

4.6.5.2 Verification of DCP Activities

The IDVP verification of DCP activities for heat exchangers is defined by ITRs -8 and -35. The IDVP verification of the DCP work includes all aspects described in Section 4.6.1. The results of the verification have been reported in ITR-67.

The DCP Internal Technical Program for equipment consisted of a review of the seismic qualification. This review comprised checking the latest seismic qualification data against those used for the qualification of equipment. This checking was performed using the latest response spectra for the DE, DDE, and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, the equipment was requalified by analysis or testing. Equipment identified for review comprised that associated with the engineered safety systems designed by PGandE (Reference PGandE Phase I Final Report). The DCP performed a reanalysis of the CCW pump lube oil cooler with revised seismic imputs.

The CCW pump lube oil cooler was selected as the IDVP verification sample of the DCP's ITP activities for heat exchangers. One lube oil cooler is mounted with each of the three CCW pumps located in the auxiliary building at elevation 73 feet. The CCW pump lube oil coolers are Design Class I Equipment. This cooler, or heat exchanger, is one of two heat exchangers reviewed by the DCP. The other was the CCW heat exchanger, which was in the IDVP initial sample.

The IDVP performed a design review of the reanalysis. A checklist was developed which covered all criteria items, and critical analytical procedures, and ensured completeness of the DCP review. In addition to the checklist, the IDVP work included assessments of the completeness, applicability, consistency of the reanalysis methodology. Where discrepancies were noted, or methodology was deemed not totally appro-

priate, alternate calculations were carried out by the IDVP to verify the conclusions of the DCP reanalysis.

One EOI file; 1130, was established. The DCP reanalysis of the CCW pump lube oil cooler showed that allowable criteria were exceeded and that physical modifications were required. This reanalysis was the analysis of record when the DCP had indicated that all ITP work in this area was complete and no physical modifications were necessary (DCP Phase I Final Report, Revision 3, dated 4/22/83). There is no concern with the engineering of this item. The IDVP determined that the status of qualification was internally tracked within the DCP and required actions would have been implemented, even though this was not apparent from the DCP Phase I Final Report. EOI 1130 was resolved as a Deviation.

The technical effort of the verification program intended to be conducted by the IDVP is complete except for IDVP/DCP agreement on the allowable stress criteria to be used for cast iron. Based upon the efforts performed to August 19, 1983, the IDVP considers the following aspects of the DCP work to be acceptable:

- Seismic spectra utilized in the reanalysis were the current spectra.
- The methods and results of the reanalysis reviewed comply with the established DCP criteria.
- Mathematical modeling of the tank adequately represented the cooler structure.
- Because all DCP reviewed heat exchangers are included in the IDVP, all such heat exchangers have been verified as complying with criteria.

these other areas are sufficiently large, and they have not identified any similar concerns (see other equipment sections).

- If there are further instances of incorrect bolt size, the IDVP does not believe there will be an impact on licensing criteria, for two reasons. First, the DCP has inspected all bolt sizes in HVAC equipment; any errors will be within measurement tolerances. Second, all discrepancies identified by the IDVP were small and did not affect criteria.

To further strengthen these conclusions, the IDVP performed further field verification for bolt sizes as part of the verification of corrective action. The results of this field verification confirm the conclusions above.

4.6.6.3 Verification of DCP Activities - HVAC Equipment

The IDVP performed verification of DCP activities for HVAC equipment in accordance with ITRs -8 and -35. The IDVP verification of the DCP work included all aspects described in Section 4.6.1 above. The samples selected for IDVP review are representative of Design Class I rotating machinery. The results of this verification have been presented in ITR-67.

The DCP Internal Technical Program (ITP) for equipment consisted of a review of the newest seismic qualification data against data used for the qualification of equipment. This check was performed using the latest response spectra for the DE, DDE and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, this was done by analysis or testing. Equipment identified for review was that associated with the engineered safety systems designed by PGandE (see PGandE Phase 1 Final Report).

The DCP assembled documentation packages for seismic qualification of all safety-related HVAC equipment. This equipment is identified and the method of seismic qualification is documented. The qualification is reviewed for effect of any seismic spectra changes. A reanalysis or test was performed if the spectra affected the qualification of the component. Redesign and modifications were implemented, if required, to maintain qualification.

The sample selected by the IDVP for verification of the DCP's ITP for HVAC equipment consisted of supply fan S-1 and compressor CP-35. Supply fan S-1 and an identical fan, S-2, are located in the auxiliary building at elevation 85 feet. Compressor CP-35 and an identical unit, CP-36, are located in the auxiliary building at elevation 154 feet, 6 inches. Both the fan and compressor are Design Class I equipment.

or incorrect value produced stresses within allowables. EOI 1125 was classified as a Class C Error. The resolution is discussed under "Hosgri Spectra," section 4.3.2.2.

EOI 1127 was issued for two concerns over the modeling technique and methods used in the reanalysis of fan S-1. One concern was resolved as not significant based on the IDVP initial sample work. The IDVP determined that the second concern was not valid and the DCP modeling method was correct. EOI 1127 was classified as a Closed Item.

The technical aspects of the verification program conducted by the IDVP has been completed and reported in ITR-67. Based upon these efforts, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria.

- The mathematical modeling of the structures was found to be adequate.
- Application and satisfaction of established DCP criteria were found to be adequate.
- A concern did exist over the proper control and application of seismic spectra, an issue which is related to work done in the initial sample. The concern was resolved as discussed in section 4.3.2.2.

The IDVP intends to formulate a final conclusion as to the qualification of and its conformance to licensing criteria when the IDVP verification is complete. The IDVP effort will include a completion sample to evaluate any changes in design input.

(To Be Supplemented)

4.6.7.3 Verification of DCP Activities

The IDVP performed verification of DCP activities for electrical equipment in accordance with ITRs -8 and -35. The IDVP review examined the DCP work for all aspects discussed in Section 4.6.1. This category of electrical equipment and instrumentation includes all such equipment qualified by analysis. This verification effort has been reported in ITR-67. Equipment items qualified by shake table testing are discussed in Section 4.9.1.

The DCP reviewed the previous seismic qualifications of equipment to determine their validity with respect to current spectra for the DE, DDE, and Hosgri event. If the analysis was invalid, the equipment was reanalyzed to ensure qualification to the current response spectra and then redesigned or modified as required. Equipment identified for review is equipment associated with the engineered safety systems designed by PGandE (see PGandE Phase I Final Report).

The station battery racks were selected as the IDVP verification sample of the DCP's review of electrical equipment qualified by analysis. The racks support the station batteries, which are Design Class I equipment. This equipment is located in the auxiliary building at elevation 115 feet.

The station battery racks are one of five major items of electrical and instrumentation equipment qualified by analysis that are within the IDVP scope. Major equipment in this case excludes small panels, transmitters, switches, circuit breakers and other small items of this type.

Of the five major equipment items, two were included in the IDVP initial sample work: the main annunciator cabinet and the hot shutdown remote panel. Two others were included in the additional verification sample: the local instrument panels and the instrument AC panel.

Thus, with the inclusion of the station battery racks, all analyzed major electrical equipment and instrumentation items have been included in the IDVP verification effort.

The IDVP performed a design review of the reanalysis performed by the DCP on the station battery racks, using a checklist to cover analysis criteria items, critical analytical procedures, and completeness of the DCP review. In addition to the checklist, the IDVP design review included assessments on the completeness, applicability, consistency and adequacy of the DCP review and reanalysis methodology. Where discrepancies were noted, alternate calculations were carried out by the IDVP to verify the conclusions of the DCP reanalysis.

Results of the IDVP reviews of the DCP reanalysis of the station battery racks are:

- Seismic spectra used in the reanalysis were the current spectra.
- No specific analysis criteria were formally established for this equipment. However, the American Institute of Steel Construction Code was used by the DCP as criteria for the structural analysis.
- An incorrect bolt size was used in the analysis. (See EOI 1128).

EOI 1128 notes that in the DCP reanalysis of the station battery racks 3/8 inch bolts were used instead of the 1/2 inch bolts called for and the shear force was incorrectly calculated. A further IDVP evaluation indicated that the structural integrity of the racks was not impaired. EOI 1128 was resolved as an Error Class C.

The verification program intended to be conducted by the IDVP is complete. The IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria.

- The seismic response spectra used by the DCP for electrical equipment and instrumentation qualified by analysis reflects the current spectra.

- Although no specific criteria have been established by the DCP for analyses in this area, use of the AISC Code is adequate.

- The mathematical modeling used for the reanalysis was considered to be acceptable and the results of the reanalysis comply with DCP criteria.

The IDVP intends to formulate a final conclusion as to the qualification of all electrical equipment and instrumentation and its conformance to licensing criteria when all IDVP verification work in this area is complete. Effects of any changes in the seismic design inputs will be evaluated as part of the IDVP Completion Sample.

(To Be Supplemented)

The procedure utilized by the IDVP to perform the design reviews involved a combination of design review checklists and alternate calculations. The latter were performed in those cases where checklist review results were not sufficient to verify that supports met licensing commitments.

The IDVP verification of the DCP plan implementation was based on a 100 percent sample of the DCP program for instrument tubing and supports. The DCP program implementation is contained in six qualification analysis packages which make up the IDVP scope for design review. One of the six packages contains the generic tubing span qualifications. The remaining five contain tubing support qualifications based on a DCP walkdown to identify controlling or specific worst-case configurations within the containment annulus.

EOI 1123 was issued due to the use of incorrect member properties for a particular support type. The member properties were different from both the DCP documented as-built information and the IDVP field verified data, which were equivalent. The DCP concurred with this assessment of the discrepancy, and the file was classified as a Class C Error.

The verification program intended to be conducted by the IDVP is not yet complete. Based upon the efforts performed to June 25, 1983, the IDVP considers the following aspects of the DCP work to be acceptable:

- Four DCP qualification analyses have been verified to be in conformance with procedures.

- The DCP provided sufficient and accurate "as-built" survey documentation supporting DCP qualification analyses for 12 support types.

The IDVP intends to formulate a final conclusion as to the qualification of instrument tubing and supports and their conformance to licensing criteria when the IDVP verification has been completed.

(To Be Supplemented)

4.6.9 Filters

The IDVP verification of DCP activities for filters is defined by ITRs-8 and -35. The IDVP verification of the DCP work included all aspects described in 4.6.1. The results of the verification have been reported in ITR-67.

The DCP Internal Technical Program for filters involved a review of the seismic qualification. This review consisted of checking the newest seismic qualification data against data used for the qualification of equipment. This check was performed using the latest response spectra for the DE, DDE, and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, the equipment was requalified by analysis or testing. Equipment identified for review comprised that associated with the engineered safety systems designed by PGandE (Reference PGandE Phase I Final Report). this includes the safety injection pump lube oil filter, diesel oil transfer filter, and the strainer.

The safety injection pump lube oil filter was selected as the IDVP verification sample. One lube oil filter is mounted with each of the two safety injection pumps located in the auxiliary building at elevation 85 feet. The safety injection pump lube oil coolers are Design Class I equipment.

For the safety injection lube oil filter, the IDVP performed a design review of the the DCP reanalysis. A design review checklist was developed which covered all criteria items, critical analytical procedures, and completeness of the DCP review. In addition to the checklist, the IDVP design review included reviewer assessments on the completeness, applicability, consistency, and reanalysis methodology. Where discrepancies were noted, or methodology deemed not totally

4.6.9 Filters

The IDVP verification of DCP activities for filters is defined by ITRs-8 and -35. The IDVP verification of the DCP work included all aspects described in 4.6.1. The results of the verification have been reported in ITR-67.

The DCP Internal Technical Program for filters involved a review of the seismic qualification. This review consisted of checking the newest seismic qualification data against data used for the qualification of equipment. This check was performed using the latest response spectra for the DE, DDE, and Hosgri event. Whenever changes to the response spectra required requalification of the equipment, the equipment was requalified by analysis or testing. Equipment identified for review comprised that associated with the engineered safety systems designed by PGandE (Reference PGandE Phase I Final Report). this includes the safety injection pump lube oil filter, diesel oil transfer filter, and the strainer.

The safety injection pump lube oil filter was selected as the IDVP verification sample. One lube oil filter is mounted with each of the two safety injection pumps located in the auxiliary building at elevation 85 feet. The safety injection pump lube oil coolers are Design Class I equipment.

For the safety injection lube oil filter, the IDVP performed a design review of the the DCP reanalysis. A design review checklist was developed which covered all criteria items, critical analytical procedures, and completeness of the DCP review. In addition to the checklist, the IDVP design review included reviewer assessments on the completeness, applicability, consistency, and reanalysis methodology. Where discrepancies were noted, or methodology deemed not totally

appropriate, alternate calculations were carried out by the IDVP to verify the conclusions of the DCP reanalysis.

No EOI files were established for this category of equipment.

The technical aspects of the verification program conducted by the IDVP has been completed and reported in ITR-67. Based upon these efforts, the IDVP considers the following aspects of the DCP work to be acceptable and to satisfy the licensing criteria:

- The seismic spectra utilized by the DCP for the filter reflect the current spectra (see 7.0).
- Mathematical modeling adequately represented the filter and support structure.
- The methods and results of the reanalysis comply with established DCP criteria.

The IDVP intends to formulate a final conclusion as to the qualification of all mechanical equipment and its conformance to licensing criteria when all IDVP verification work in this area is complete. Effects of future revisions to the seismic inputs on equipment will be evaluated as part of the IDVP Completion Sample.

(To Be Supplemented)

In addition, utilizing the DCP jet impingement review results for a sample of high-energy lines, the IDVP verified the jet-target interactions of each sampled postulated line break, and reviewed the safety effects on safety-related equipment.

High energy lines were selected by the IDVP to represent approximately 10 percent of the estimated total number of postulated HELBs inside containment. The sample consisted of large and small lines including reactor coolant piping as well as secondary system piping. Since the IDVP verification was conducted prior to the completion by the DCP of their reanalysis effort, the IDVP sample was drawn from the completed work available. This represented approximately 50 percent of the high energy lines inside containment. The IDVP field verified the jet-target interactions of each sampled postulated line break and reviewed the DCP safety evaluation of the effects of these jet-target interactions.

As a result of the IDVP verification, four items of possible concern were identified and are reported in EOI 8065. The DCP failed to properly identify these four safety-related targets which were impinged upon by the sampled postulated pipe break events. However, in comparison to the total of 273 DCP-identified jet-target interactions determined adequate by the IDVP, it was concluded that these four discrepancies were isolated instances and were not indicative of any generic deficiency in the jet impingement field review. In addition, the results of further evaluation of these jet-target interactions indicated that accident mitigation capabilities would not be impaired due to these localized jet impingement effects. On this basis, EOI File 8065 was closed.

The DCP reanalysis program as established by the procedure and criteria as well as the sampled documentation of this jet impingement reanalysis provided sufficient information for the IDVP to conclude that the specific concerns in EOI File 7002 were adequately addressed and documented. EOI File 7002 was closed.

where the number used is that for the EOI File identified as a Finding. A history of each EOI File is contained in the LISTLOG printout in Appendix D. The ITRs which include a detailed presentation of the subject are identified in Table 5-1 and additional information is available from the cross-indexes in Appendix E. Table 5-1 also references the final report section, or sections, which summarize the technical aspects of the file.

Although each EOI File identified as a Finding has been classified by the IDVP as an ER/A, ER/AB, or ER/B, there are three different bases for that classification, specifically:

- 13 files (932, 938, 949, 963, 983, 1069, 8001, 8009, 8010, 8012, 8017, 8057, 8062) were classified on the basis of a technical error identified during verification of the initial sample.
- 1 file (7002) was classified on the basis of the IDVP evaluation of the QA Audits and Reviews.
- 7 files (1003, 1014, 1022, 1026, 1092, 1097, 1098) were classified as a result of the establishment of the DCP Corrective Action Program.

With respect to the last basis, none of these seven EOI Files had been fully resolved by the IDVP at the time the Corrective Action Program (CAP) was established. When the CAP was established, each of these files was redefined to track the generic DCP action and was resolved by verification of DCP activities in accordance with ITR-8 and -35. EOI File 7002 also led to generic DCP action which was verified in accordance with ITR-34.

With respect to the 13 EOI Files which resulted in a Finding on the basis of a technical error, 6 developed from RLCA Phase I work and 7 from SWEC Phase II work. Of the 6 RLCA originated files, one (983)

was redefined to cover generic CAP efforts. The remaining 5 files were concerns specific to the item being evaluated by RCLA, but all were influential in defining expanded IDVP activities in ITRs-1 or -8. All 7 SWEC originated files were specific concerns, and all 7 contributed to the identification of four generic concerns which were verified in accordance with ITR-34.

Several of the Table 5-1 pages indicate that other EOI Files were combined with the file identified as the Finding. The existence of such combined files should not be interpreted as increasing or decreasing the number of Findings. In no case were two or more Findings combined. In all cases, each of the files being combined was tracking a common concern. By combining the files, the overall concern was more readily tracked and each was more certain of proper resolution. When the combination was with an EOI File originated by RCLA, the combined concern was being addressed as part of the CAP and was subject to IDVP verification in accordance with ITRs-8 and -35. There were only two cases (EOI 8001s and 8012) where SWEC originated files were combined; one also included two RFR originated files. The former affected the evaluation of environmental conditions outside of containment and were resolved by DCP activities verified in accordance with ITR-34. EOI 8012 considered separation and single failure criteria of Class 1E CRVP power supplies.

TABLE 5-1-1003

SIGNIFICANT FINDING: EOI FILE: 1003

PHYSICAL MODIFICATION(S)?: No ERROR CLASS: A/B

TITLE: HVAC Duct Support Reanalyses

1. THE FOLLOWING EOI FILE NUMBERS WERE COMBINED WITH THIS FILE: 1077

2. STRUCTURE(S), SYSTEM(S) OR COMPONENT(S) INVOLVED: HVAC duct supports

3. SUMMARY OF CONCERN:

Certain HVAC duct supports may not have been evaluated for Hosgri loadings prior to 811008.

4. SUMMARY OF RESOLUTION:

DCP committed to review the seismic analysis and design of all Design Class 1 HVAC duct supports per Rev. 0 to Section 2.5.1 of the DCP Phase I Final Report and to reanalyze and, if necessary, redesign such supports.

The IDVP has verified the DCP Corrective Action per ITRs-8 and -35, with the exception of the concern addressed by EOI 1134 (having to do with the application of the Rayleigh-Ritz method) which will be separately addressed.

5. RESULTED IN ADDITIONAL VERIFICATION/SAMPLE OR VERIFICATION OF DCP EFFORTS PER ITR(S): 8

6. FOR FURTHER INFORMATION SEE:

APPENDIX D AND SUBSECTION(S): 4.6.6

INTERIM TECHNICAL REPORT(S): 15 and 63

TABLE 5-1-1022

SIGNIFICANT FINDING: EOI FILE: 1022

PHYSICAL MODIFICATION(S)?: No ERROR CLASS: A/B

TITLE: Intake Structure Reevaluation

1. THE FOLLOWING EOI FILE NUMBERS WERE COMBINED WITH THIS FILE: 967 and 988

2. STRUCTURE(S), SYSTEM(S) OR COMPONENT(S) INVOLVED: Intake structure

3. SUMMARY OF CONCERN:
As a result of IDVP concerns listed in the above files and their own internal technical program review, the DCP committed to a reevaluation of the Intake Structure in their corrective action program.

Modifications made with respect to wave-force effects must be considered in the seismic reevaluation.

4. SUMMARY OF RESOLUTION:
Verification of DCP Corrective Action is complete.

5. RESULTED IN ADDITIONAL VERIFICATION/SAMPLE OR VERIFICATION OF DCP EFFORTS PER ITR(S): 8

6. FOR FURTHER INFORMATION SEE:

APPENDIX D AND SUBSECTION(S): 4.3 and 4.4.6
INTERIM TECHNICAL REPORT(S): 10, 32, and 58

TABLE 5-1-1069

SIGNIFICANT FINDING: EOI FILE: 1069

PHYSICAL MODIFICATION(S)?: Yes ERROR CLASS: A

TITLE: Auxiliary Feedwater System Valves LCV-113 and LCV-115

1. THE FOLLOWING EOI FILE NUMBERS WERE COMBINED WITH THIS FILE: None

2. STRUCTURE(S), SYSTEM(S) OR COMPONENT(S) INVOLVED: Valves LCV-113 and LCV-115

3. SUMMARY OF CONCERN:
PGandE Piping Design Analysis 2-14 (prior to 811130) indicated that supports are not required on the valves. The RLCA verification analysis showed supports are needed. This fact was confirmed with a later PGandE analysis. Also, PGandE to obtain approval from the valve supplier of the addition of supports on the valve operator.

4. SUMMARY OF RESOLUTION:
Verification of modification and of valve qualification with the added supports is complete.

5. RESULTED IN ADDITIONAL VERIFICATION/SAMPLE OR VERIFICATION OF DCP EFFORTS PER ITR(S): 8

6. FOR FURTHER INFORMATION SEE:

APPENDIX D AND SUBSECTION(S): 4.5.2
INTERIM TECHNICAL REPORT(S): 12 and 59

TABLE 5-1-1092

SIGNIFICANT FINDING: EOI FILE: 1092

PHYSICAL MODIFICATION(S)?: Yes ERROR CLASS: A

TITLE: Fuel Handling Building Reevaluation

1. THE FOLLOWING EOI FILE NUMBERS WERE COMBINED WITH THIS FILE: 990, 991, 1027, 1079, and 1091

2. STRUCTURE(S), SYSTEM(S) OR COMPONENT(S) INVOLVED: Fuel Handling Building

3. SUMMARY OF CONCERN:
As a result of IDVP concerns listed in the above files and their own internal technical review, the DCP committed to a reevaluation of the Fuel Handling Building in this corrective action program.

4. SUMMARY OF RESOLUTION:
Verification of DCP Corrective Action is complete except for field verification against the design drawings used as the basis for the analyses.

5. RESULTED IN ADDITIONAL VERIFICATION/SAMPLE OR VERIFICATION OF DCP EFFORTS PER ITR(S): 8

6. FOR FURTHER INFORMATION SEE:

APPENDIX D AND SUBSECTION(S): 4.4.3
INTERIM TECHNICAL REPORT(S): 6 and 57

TABLE 5-2-1124

SIGNIFICANT FINDING: EOI FILE: 1124

PHYSICAL MODIFICATION(S)?: NO ERROR CLASS: B

TITLE: Auxiliary Building Spectra Generation

1. THE FOLLOWING EOI FILE NUMBERS WERE COMBINED WITH THIS FILE: None

2. STRUCTURE(S), SYSTEM(S) OR COMPONENT(S) INVOLVED:

   Control Room Floor Slab

3. SUMMARY OF CONCERN:

   The design analysis finite element model of the control room slab used to generate Hosgri response spectra did not agree with the field verified location of the supporting walls.

   The DCP has revised the finite element model to agree with the field verified dimensions. At certain frequencies the response spectra have increased by more than 15 percent.

4. SUMMARY OF RESOLUTION:

   Resolved through IDVP verification of the revised DCP analysis.

5. RESULTED IN ADDITIONAL VERIFICATION/SAMPLE OR VERIFICATION OF DCP EFFORTS PER ITR(S): 8

6. FOR FURTHER INFORMATION SEE:

   APPENDIX D AND SUBSECTION(S): 4.4.2
   INTERIM TECHNICAL REPORT(S): 55

TABLE 5-3-1069

MODIFICATION IN RESPONSE TO SPECIFIC ERROR: EOI FILE: 1069
ERROR CLASS: A

1. STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Auxiliary Feedwater System, Analysis 2-14

2. DESCRIPTION OF PHYSICAL MODIFICATION:

Addition of supports on valves LCV 113 and LCV 115.

3. PHYSICAL MODIFICATION VERIFIED BY IDVP: Yes

4. FURTHER DESCRIPTION IS AVAILABLE IN TABLE 5-1-1069 AND IN PGandE PHASE I FINAL REPORT:

SECTION(S): 1.7.2; Appendix 1C
TABLE(S): 2.2.1-4

6.4.3 Significance as Indicated by EOI File Classification

The EOI File classification system described in 3.6.2 included a classification method. As described in Section 5, the most significant errors, which were termed Findings, were identified by classification as Class A, Class A or Class B, or Class B Errors with no intent to distinguish significance among such classes. All IDVP Findings are summarized in Tables 5-1 and 5-2. As is indicated by the table included in 5.5.4, 8 percent of the initial sample and additional verification/sample EOI Files were classified as Findings. Another 16 percent of these Files were combined with Findings as discussed in Section 5.

The second most significant grouping was that termed Observations, which included all EOI Files classified as Class C Errors or as Deviations. This category would have also included Class D Errors had any been identified. EOI Files classified as Observations are summarized by 5.5, and included 38 percent of the initial sample and additional verification/sample files.

The remaining EOI Files resulting from the initial sample and additional verification/sample efforts were classed as being neither Findings or Errors. These were 37 percent of the total.

Several of the EOI Files resulted in the performance of modifications. The performance of modifications is a measure of significance, in that the absence of modifications would indicate a negligible impact of the IDVP on the actual DCNPP-1 configuration and imply that any errors identified by the IDVP were only "paper" concerns. The matter of modifications is treated briefly in 6.5, which references back to 5.4 and, specifically, to Tables 5-3 and 5-4.

7.4 IDVP STATUS AS OF JUNE 25, 1983

This report was based upon the IDVP status as of June 25, 1983 and the last revision considers additional work through August 19, 1983. The overall status may be summarized by the statement that the IDVP has completed all Phase I and Phase II efforts in accordance with the NRC-approved plans with the following exceptions:

- RLCA soils efforts defined by ITR-1 and subsequently expanded by Staff comment

- Certain RLCA efforts defined by ITRs-8 and -35

The RLCA efforts are to be completed by supplementing various subsections of this report and by the issuance of various ITRs.

Table 7.4-1 summarizes the status of the IDVP effort as of August 19, 1983. The first column identifies all portions of this IDVP Final Report which must be supplemented at a later date to report completion of the IDVP effort defined by ITRs-8 and -35. The second column provides a cross-reference to the PGandE Final Report sections which report on the same subject, and is also useful in examining the DCP status which is indexed in Table 7.3-1 through 7.3-6 by these numbers.

The third column of Table 7.4-1 identifies those EOI Files which pertain to each of the incomplete subsections and which were unresolved as of August 19, 1983.

The fourth column of Table 7.4-1 identifies the ITR which will be issued to report the details of the IDVP work summarized in the listed IDVP Final Report subsection, as well as the future efforts required to complete the IDVP. These include ITRs-51, -54 -56, -59, -60, -61, -63, -65, and -68. All other ITRs have been issued, except that ITRs-52 and -53 have been replaced by ITR-68, ITR-62 will be combined with ITR-60, and ITRs-64 and -66 will be combined with ITR-63.

The last three columns of Table 7.4-1 summarize the status of IDVP verification. In all cases, the IDVP verification program is that contained in either ITR-8 or -35. The column headings are:

- "Field" - indicates the status of field verification, not including field verification of modifications.
- "Design" - indicates the status of verification of DCP design efforts.
- "Mod" - indicates the status of IDVP field verification of physical modifications.

One of four terms (Yes, Part, No or NA) is entered in Table 7.4-1 to summarize the IDVP status.

- In the first of these last three columns: "Yes" means that the IDVP has completed this field verification; "No" means that IDVP field verification is planned, but not yet completed; and, "NA" means that field verification is not applicable.
- In the second of these last three columns: "Yes" means that the IDVP has completed their design verification effort except, where applicable, the field verification of modifications; "Part" means that the IDVP has completed a

TABLE 7.4-1

STATUS OF INCOMPLETE VERIFICATIONS DEFINED BY ITRS-8, -34, AND -35

Report Subsections		Unresolved	ITR	Verification Complete?		
IDVP	PGandE	EOIs	No.	Field	Design	Mod
4.4.2.2	2.1.2	1097	55	Yes	No	NA
4.4.3	2.1.3	1092	57-1	NA	Yes	No
4.4.4	2.1.1	1014	54	NA	No	No
4.4.5	2.1.1.4.3	1014	51	Yes	No	No
4.4.6	2.1.5		58-1	Yes	Yes	NA
4.4.8	2.1.4	1026 1028	56	Yes	No	No
4.5.2.3a	2.2.1	938 1098 1138 1141	59	Yes	Part	No
4.5.2.3b	2.2.3	1098	60	Yes	Part	No
4.5.3.2a	2.2.2	1098 1141	61	Yes	Part	NA
4.5.3.2b	2.2.2	1098 1142	60	Yes	Part	No
4.6.2.2	2.3.1		67-1	NA	Yes	NA
4.6.3	2.3.1		67-1	NA	Part	NA
4.6.4	2.3.1		67-1	Yes	Part	NA
4.6.5	2.3.1		67-1	Yes	Part	NA
4.6.6.3	2.3.3		67-1	Yes	Yes	NA
4.6.6.5	2.5	1134	63	No	Part	No

TABLE 7.4-1 (Cont)

Report Subsections		Unresolved	ITR	Verification Complete?		
IDVP	PGandE	EOIs	No.	Field	Design	Mod
4.6.7	2.3.2		67-1	Yes	Yes	NA
4.6.8.1b	2.4	983	63	Yes	Yes	No
4.6.8.2b	2.6		63	Yes	Yes	NA
4.6.9	NA	NA	67-1	Yes	Yes	NA
4.9.1.4	2.3.2.3.3	NA	67-1	NA	Yes	NA
4.9.2	NA	NA	68	Yes	No	NA
4.9.3	NA	NA	65	No	No	No

SECTION 8.0

REFERENCES

8.1 IDVP DOCUMENTATION

8.1.1 Teledyne Engineering Services

The following ITRs and Program Plans have been published by Teledyne Engineering Services, 130 Second Avenue, Waltham, Massachusetts.

- Diablo Canyon Nuclear Power Plant Design Verification Program Management Plan Phase I, March 29, 1982.
- Diablo Canyon Nuclear Power Plant Design Verification Program Management Plan Phase II, June 18, 1982.
- Diablo Canyon Nuclear Power Plant - Independent Design Verification Program Adjunct Program for Evaluation of Construction Quality Assurance, November 1982.
- ITR-2: Comments on the R. F. Reedy, Inc., Quality Assurance Audit Report on Safety-Related Activities Performed by Pacific Gas and Electric Prior to June 1978.

  Revision 0, June 23, 1982
- ITR-11: Pacific Gas and Electric - Westinghouse Seismic Interface Review.

  Revision 0, November 2, 1982
- ITR-50: Containment Annulus Structure Vertical Seismic Evaluation.

  Revision 0, July 22, 1983

- ITR-16: Soils - Outdoor Water Storage Tanks.

  Revision 0, December 8, 1982

- ITR-17: Piping - Additional Samples.

  Revision 0, December 14, 1982

- ITR-30: Small Bore Piping Report.

  Revision 0, January 12, 1983

- ITR-31: HVAC Components.

  Revision 0, January 14, 1983
  Revision 1, August 4, 1983

- ITR-32: Pumps.

  Revision 0, February 17, 1983
  Revision 1, April 1, 1983

- ITR-33: Electrical Equipment Analysis.

  Revision 0, February 18, 1983
  Revision 1, April 28, 1983

- ITR-35: Independent Design Verification Program Verification Plan for Diablo Canyon Project Activities.

  Revision 0, April 1, 1983

- ITR-37: Valves.

  Revision 0, February 23, 1983

- ITR-39: Soils - Intake Structure Bearing Capacity and Lateral Earth Pressure.

  Revision 0, February 25, 1983

- ITR-40: Soils Report - Intake Sliding Resistance.

  Revision 0, March 9, 1983

- ITR-43: Heat Exchangers.

  Revision 0, April 14, 1983

- ITR-44: Shake Table Test Mounting Class 1E Electrical Equipment.

  Revision 0, April 15, 1983

- ITR-57: Review of DCP Activities Fuel Handling Building.
  Revision 0, August 1, 1983
- ITR-58: Verification of DCP Activities Intake Structure.
  Revision 0, August 8, 1983
- ITR-67: Large and Small Bore Pipe Supports.
  Revision 0, August 12, 1983
- Preliminary Report on the Design Interface Review of the Seismic Reverification Program, November 12, 1981.
- Design Verification Program, Seismic Service-Related Contracts Prior to June 1978.
  Revision 0, December 3, 1981
  Revision 1, February 27, 1982
- Design Verification Program for Power Ascension - Diablo Canyon Nuclear Power Plant - Unit 1.
  Revision 0, January 9, 1982

8.1.4 Stone & Webster Engineering Corporation

The following ITRs and Program Plans have been published by Stone & Webster Engineering Corporation, 245 Summer Street, Boston, Massachusetts.

- ITR-14: Verification of the Pressure, Temperature, Humidity, and Submergence Environments Used for Safety-Related Equipment Specifications Outside Containment for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System.

  Revision 0, December 6, 1982
  Revision 1, May 9, 1983
  Revision 2, July 25, 1983

- ITR-18: Verification of the Fire Protection Provided for Auxiliary Feedwater System, Control Room Ventilation and Pressurization System Safety-Related Portion of the 4160 V Electric System.

  Revision 0, December 13, 1982
  Revision 1, May 24, 1983

- ITR-19: Verification of the Post-LOCA Portion of the Radiation Environments Used for Safety-Related Equipment Specification Outside Containment for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System.

  Revision 0, December 16, 1982

- ITR-20: Verification of the Mechanical/Nuclear Design of the Control Room Ventilation and Pressurization System.

  Revision 0, December 16, 1982
  Revision 1, April 20, 1983
  Revision 2, July 25, 1983

- ITR-21: Verification of the Effects of High Energy Line Cracks and Moderate Energy Line Breaks for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System.

  Revision 0, December 15, 1982
  Revision 1, May 3, 1983

- ITR-22: Verification of the Mechanical/Nuclear Portion of the Auxiliary Feedwater System.

  Revision 0, December 17, 1982
  Revision 1, April 20, 1983
  Revision 2, July 25, 1983

- ITR-23: Verification of High Energy Line Break and Internally Generated Missile Review Outside Containment for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System.

  Revision 0, December 20, 1982
  Revision 1, May 27, 1983

- ITR-24: Verification of the 4160 V Safety-Related Electrical Distribution System.

  Revision 0, December 21, 1982
  Revision 1, May 4, 1983

- ITR-25: Verification of the Auxiliary Feedwater System Electrical Design.

  Revision 0, December 21, 1982
  Revision 1, April 29, 1983

- ITR-26: Verification of the Control Room Ventilation and Pressurization System Electrical Design.

  Revision 0, December 21, 1982
  Revision 1, May 2, 1983

- ITR-27: Verification of the Instrument and Control Design of the Auxiliary Feedwater System.

  Revision 0, December 23, 1982
  Revision 1, May 13, 1983
  Revision 2, July 25, 1983

- ITR-28: Verification of the Instrument and Control Design of the Control Room Ventilation and Pressurization System.

  Revision 0, December 23, 1982
  Revision 1, May 13, 1983
  Revision 2, July 25, 1983

- ITR-29: Design Chain - Initial Sample.

  Revision 0, January 17, 1983

- ITR-34: Verification of DCP Efforts by Stone & Webster Engineering Corporation.

  Revision 0, February 4, 1983
  Revision 1, March 24, 1983

- ITR-36: Final Report on Construction Quality Assurance Evaluation of G. F. Atkinson.

  Revision 0, February 25, 1983
  Revision 1, June 20, 1983

- ITR-38: Final Report on Construction Quality Assurance Evaluation of Wismer & Becker.

  Revision 0, March 1, 1983
  Revision 1, March 16, 1983
  Revision 2, June 20, 1983

- ITR-45: Additional Verification of Redundancy of Equipment and Power Supplies in Shared Safety-Related Systems.

  Revision 0, May 17, 1983

- ITR-46: Additional Verification of Selection of System Design Pressure and Temperature and Differential Pressure Across Power-Operated Valves.

  Revision 0, June 27, 1983

- ITR-47: Additional Verification of Environmental Consequences of Postulated Pipe Ruptures Outside of Containment.

  Revision 0, June 27, 1983

- ITR-48: Additional Verification of Jet Impingement Effects of Postulated Pipe Ruptures Inside Containment.

  Revision 0, July 27, 1983

- ITR-49: Additional Verification of Circuit Separation and Single Failure Review of Safety-Related Electrical Equipment.

  Revision 0, June 23, 1983

8.2 OPEN MEETINGS

8.2.1 NRC Meetings (Transcribed)

The following meetings were transcribed. The date of the meeting and the attendees are listed.

October 9, 1981, Nuclear Regulatory Commission and Pacific Gas and Electric Company.

February 3, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, and Stone & Webster Engineering Corporation.

March 25, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, Stone & Webster Engineering Corporation, and Roger F. Reedy, Inc.

April 1, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., and Stone & Webster Engineering Corporation.

June 10, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, and Roger F. Reedy, Inc.

July 27, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, and Brookhaven National Laboratories.

August 6, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., Stone & Webster Engineering Corporation, and Designated Other Parties.

September 1, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., Stone & Webster Engineering Corporation, Designated Other Parties, and Brookhaven National Laboratories.

October 19, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, and Stone & Webster Engineering Corporation.

October 20, 1982. Nuclear Regulatory Commission.

November 10, 1982, Nuclear Regulatory Commission and Designated Other Parties.

December 8, 1982, Nuclear Regulatory Commission.

December 21, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Brookhaven National Laboratories, and Westinghouse.

January 13, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., and Designated Other Parties.

January 28, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Stone & Webster Engineering Corporation, and Westinghouse.

February 15, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, Designated Other Parties, and Brookhaven National Laboratories.

May 4, 1983, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, and Designated Other Parties.

May 20, 1983, Nuclear Regulatory Commission, Teledyne Engineering Services, Stone & Webster Engineering Corporation, Designated Other Parties, and Westinghouse.

May 21, 1983, Nuclear Regulatory Commission, Teledyne Engineering Services, Stone & Webster Engineering Corporation, Designated Other Parties, and Westinghouse.

June 17, 1983, Nuclear Regulatory Commission, Robert L. Cloud Associates, Diablo Canyon Project, Brookhaven National Laboratories and Designated Other Parties.

July 6, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Brookhaven National Laboratories.

July 14, 1983, Nuclear Regulatory Commission, Pacific Gas and Electric Company, and Designated Other Parties.

August 10, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, and Designated Other Parties.

8.2.2 Other "Open" Meetings.

November 12, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, and Brookhaven National Laboratories.

December 9, 1982, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, and Robert L. Cloud Associates.

December 14-15, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, and Robert L. Cloud Associates.

December 20, 1982, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, and Roger F. Reedy, Inc.

February 4, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., Stone & Webster Engineering Corporation, and Brookhaven National Laboratories.

February 14, 1983, Nuclear Regulatory Commission and Brookhaven National Laboratories.

April 21, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., and Stone & Webster Engineering Corporation.

April 25-26, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Stone & Webster Engineering Corporation, and Designated Other Parties.

April 26-27, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, and Robert L. Cloud Associates.

April 27-28, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, and Robert L. Cloud Associates.

May 12, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, Robert L. Cloud Associates, Roger F. Reedy, Inc., Stone & Webster Engineering Corporation, and Designated Other Parties (as Observers).

June 17, 1983, Nuclear Regulatory Commission, Pacific Gas and Electric Company, Teledyne Engineering Services, Robert L. Cloud Associates, and Brookhaven National Laboratories.

July 21, 1983, Nuclear Regulatory Commission, Diablo Canyon Project, Teledyne Engineering Services, and Robert L. Cloud Associates.

July 27, 1983, Diablo Canyon Project, Teledyne Engineering Services, and Robert L. Cloud Associates.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	820120	FID	7	821123	TES	ER/A	PG&E RDF		YES	VALVE 8805B ORIENT. LINE 1988, AUX. BUILDING.

COMMENT: VALVE 8805B WILL BE ROTATED TO VERTICAL POSITION REQUIRED BY PG&E DRAWING DC663219-458-2(ERROR CLASS A). WESTINGHOUSE LETTER PG&E-4735 (821026) PERMITS VALVES 8726A, 8724A AND 8728A TO BE INSTALLED IN HORIZONTAL DIRECTION (CLOSED ITEM). ALSO IN ITR 12.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	820120	FID	8	830721	TES	OIR	RLCA RDF		YES	VALVE 8805B ORIENT. LINE 1988, AUX. BUILDING.

COMMENT: VALVE 8805B WILL BE ROTATED TO VERTICAL POSITION REQUIRED BY PG&E DRAWING DC663219-458-2(ERROR CLASS A). WESTINGHOUSE LETTER PG&E-4735 (821026) PERMITS VALVES 8726A, 8724A AND 8728A TO BE INSTALLED IN HORIZONTAL DIRECTION (CLOSED ITEM). ALSO IN ITR 12. RLCA TO FIELD VERIFY COMPLETED MOD INDICATED BY DCP 830720 COMP. SHT.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		9	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		10	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		11	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		12	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		13	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
938	0		14	0						

COMMENT: SPACE RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
939	820120	FID	0	820120	RLCA	OIR	RLCA RDF			SUPT. 73-72R DIRECTION. LINE 1988, AUX. BUILDING.

COMMENT: ISO 446544 REV.11 SHOWS SUPPORT 73/72R TO BE ACTIVE IN N-S DIRECTION ONLY; FIELD INSPECTION SHOWS SUPPORT TO BE ACTIVE IN BOTH N-S & E-W DIRECTIONS.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
939	820120	FID	1	820519	RLCA	PER/C	TES RDF			SUPT. 73-72R DIRECTION. LINE 1988, AUX. BUILDING.

COMMENT: RLCA 102 ANALYSIS SHOWED ALL STRESSES LESS THAN ALLOWABLE. PG&E ANALYSIS 8-25 SHOWS SUPPORT ACTIVE IN N-S DIRECTION ONLY

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
939	820120	FID	2	820621	TES	ER/C	PG&E RDF			SUPT. 73-72R DIRECTION. LINE 1988, AUX. BUILDING.

COMMENT: ITR-1, 3.2.4 ; PG&E LETTER DCVP-RLCA-74 DATED APRIL 23, 1982 (RLCA FILE P105-4-939-006).PG&E PIPING ANALYSIS 8-25 (RLCA FILE P105-4-432).RLCA PIPING ANALYSIS RLCA 102. SUPPORT ACTIVE IN THE N-S & E-W DIRECTION. ALL PIPE STRESSES LESS THAN ALLOWABLES.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
939	820120	FID	3	820708	TES	CR	NONE RDF		NO	SUPT. 73-72R DIRECTION. LINE 1988, AUX. BUILDING.

COMMENT: SUPT. 73/72R ON CVC ISO 446544 R11 AND DESIGN ANALYSIS 8-25 IS SHOWN AS X-DIR SUPPORT. FIELD INSPECTION INDICATED SUPT. IN X-Z DIRECTION. RLCA 102 ANALYSIS SHOWS STRESSES LESS THAN ALLOWABLE. PG&E LETTER DCVP-RLCA-74 (820423 AGREES WITH FIELD INSPECTION. ERROR CLASS C. NO PHY. MODS. PER PG&E RESOLUTION SHEET 820701.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
940	820120	FID	0	820120	RLCA	OIR	RLCA RDF			LINE 103 DIMENSION. TURBINE BUILDING.

COMMENT: ISO 449316 REV.3 SHOWS "AS-BUILT" LENGTH OF LINE 103 SOUTH OF SUPPORTS 18/2R & 18/12SL AS 15 FT,6 INCHES. RLCA FIELD INSPECTION SHOWED DIMENSION AS 6 FT.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
940	820120	FID	1	820510	RLCA	PER/C	TES RDF			LINE 103 DIMENSION. TURBINE BUILDING.

COMMENT: THE DESIGN ANALYSES 4-2 & 4-3 DO NOT SHOW CORRECT DIMENSION. PIPE STRESSES IN RLCA 102 ANALYSIS DO NOT EXCEED ALLOWABLE.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
940	820120	FID	2	820619	TES	ER/C	PG&E RDF			LINE 103 DIMENSION. TURBINE BUILDING.

COMMENT: ITR-1, 3.2.4 ; PG&E LTR DCVP-RLCA-80 (5/2/82) (RLCA FILE P105-4-940-003).PIPING ISO 449316, REV.03 (RLCA FILE - P105-4-454).PG&E PIPING ANALYSIS 4-2 (RLCA FILE P105-4-432).& 4-3(RLCA FILE P105-4-432).RLCA PIPING ANALYSIS RLCA 104 COMPUTER SEQ. NO K15RF7J (RLCA FILE P105-4-521-045).ALL STRESSES LESS THAN ALLOWABLE. DIM DIFF. EXCEED 79-14 TOLERANCE.

	REV. 0			LATEST REV.			ACTION	PG&E		
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
950	820128	FID	6	820701	TES	PRR/CI	TES	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: ITR-1, 3.5.1.3, PHYSICAL MODIFICATION COMPLETE, TES SITE VISIT SUMMARY, 820625.

950	820128	FID	7	820701	TES	CR	NONE	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: FIELD INSPECTION SHOWS UNDERSIZE PLATE INSTALLED ON FCV-95. DCO-G-M-876 REQUIRES 1/2 INCH PLATE. 3/8 INCH PLATE INSTALLED. PHYSICAL MOD. PER PG&E COMPLETION SHEET 820713 CORRECTED DISCREPENCY. ER/C, ALL STRESSES BELOW ALLOWABLE WITH OR WITHOUT MOD.

950	820128.	FID	8	830422	TES	OIR	RLCA	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: MODIFICATION OF 1/2" STIFFENER PLATE TO VALVE FCV-37 PER DCO-G-M-876 NOT IMPLEMENTED. FIELD OBSERVED TO HAVE 3/8" PLATES. CONCERNED DESIGN ANALYSIS FOR THESE VALUES MAY NOT REFLECT AS-BUILT CONDITION. RLCA TO REVIEW AND PROVIDE RECOMMENDATION FOR FUTURE DISPOSITION.

950	820128	FID	9	830429	RLCA	PPRR/OIP	TES	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: DURING FIELD VERIFICATION BY IDVP FOR OTHER EQUIPMENT, OBSERVATION THAT FCV-37 STIFFNER PLATES WERE 3/8" NOT 1/2" PER DCO-G-M-876. DESIGN ANALYSES FOR THESE VALVES MAY NOT REFLECT AS-BUILT. PG&E TO REEXAMINE AS-BUILT AND RESPOND.

950	820128	FID	10	830504	TES	PRR/OIP	PG&E	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: DURING FIELD VERIFICATION BY IDVP FOR OTHER EQUIPMENT, OBSERVATION THAT FCV-37 STIFFNER PLATES WERE 3/8" NOT 1/2" PER DCO-G-M-876. DESIGN ANALYSES FOR THESE VALVES MAY NOT REFLECT AS-BUILT. PG&E TO REEXAMINE AS-BUILT AND RESPOND.

950	820128	FID	11	830608	TES	OIR	RLCA	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: DESIGN ANALYSIS FOR THESE VALVES MAY NOT REFLECT AS-BUILT CONDITIONS. TES REQUESTS RLCA TO VERIFY THAT 1/2" PLATES HAVE BEEN INSTALLED ON THE SEVEN VALVES INCLUDED IN DCO-G-M-876.

950	820128	FID	12	830712	RLCA	PPRR/CI	TES	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: RECENT RLCA FIELD VERIFICATION SHOWS ALL VALVES SPECIFIED IN DCO-G-M-876 AS HAVING 1/2" THICK STIFFNER PLATES INSTALLED TO NOW REFLECT THE DESIGN CONDITIONS PER THE DCO.

950	820128	FID	13	830715	TES	PRR/CI	TES	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: RECENT RLCA FIELD VERIFICATION SHOWS ALL VALVES SPECIFIED IN DCO-G-M-876 AS HAVING 1/2" THICK STIFFNER PLATES INSTALLED TO NOW REFLECT THE DESIGN CONDITIONS PER THE DCO.

950	820128	FID	14	830715	TES	CR	NONE	JCT	YES	VALVE FCV 95 PLATE THICKNESS, AUX. BUILDING.

COMMENT: MODIFICATION OF 1/2" STIFFENER PLATE TO VALVE FCV-37 PER DCO-G-M-876 NOT IMPLEMENTED. FIELD OBSERVED TO HAVE 3/8" PLATES CONCERN THAT D.A. FOR VALVES MAY NOT REFLECT AS-BUILT CONDITION. RECENT RLCA FIELD VERIFICATION SHOWS ALL VALVES SPECIFIED IN DCO-G-M-876 AS HAVING 1/2" THICK STIFFNER PLATES INSTALLED TO NOW REFLECT THE DESIGN CONDITION. WAS ER/C. CI.

951	820129	FID	0	820129	RLCA	DIR	RLCA	RDF		SUPT. 1-27 LOCATION.LINE 593, AUX. BUILDING.

COMMENT: AUXILIARY FEEDWATER ISO 445878 REV.14 LOCATION OF SUPPORT 1/27R DISAGREES WITH FIELD INSPECTION LOCATION. ISO SHOWS DIMENSION AS 9 INCHES FROM ELBOW. RLCA FIELD INSPECTION SHOWED 35 INCHES FROM ELBOW.

951	820129	FID	1	820309	RLCA	PPRR/DEV	TES	RDF		SUPT. 1-27 LOCATION.LINE 593, AUX. BUILDING.

COMMENT: PG&E PIPING ANALYSIS 2-17 LOCATION DISAGREES WITH FIELD INSPECTION LOCATION; PG&E ANALYSIS SHOWS DIMENSION AS 33.25 INCHES FROM ELBOW. PG&E TO REVISE ISO.

951	820129	FID	2	820417	TES	PRR/DEV	PG&E	RDF		SUPT. 1-27 LOCATION.LINE 593, AUX. BUILDING.

COMMENT: PG&E PIPING ISO 445878, REV.14 ; PG&E PIPING ANALYSIS 2-17 DATED 5/7/82. INFORMATION INCORRECT ON ISO. FIELD AGREES WITH DESIGN ANALYSIS WITHIN 79-14 TOLERANCES.

951	820129	FID	3	820524	TES	CR	NONE	RDF	NO	SUPT. 1-27 LOCATION.LINE 593, AUX. BUILDING.

COMMENT: SUPPORT 1/27R IS SHOWN ON AUX. FEEDWATER ISO 445878 REV.14 TO BE LOCATED 9 INCHES FROM THE ELBOW.RLCA FIELD INSPECTION SHOWED THIS SUPPORT TO BE LOCATED 35 INCHES FROM THE ELBOW. DESIGN ANALYSIS 2-17 (820507) SHOWS SUPPORT 1/27R TO BE LOCATED 33 1/4" FROM ELBOW (WITHIN 79-14 TOLERANCE) DEVIATION. NO PHY. MODS. PER PG&E COMPLETION SHEET 820521.

FILE NO.	REV. 0 DATE	REV. 0 BASIS	LATEST REV. REV.	LATEST REV. DATE	LATEST REV. BY	LATEST REV. STATUS	ACTION ORG	ACTION TES	PG&E MODS	SUBJECT
982	820206	DMD	4	820721	RLCA	PPRR/CI	TES	RDC		TURB BLDG BLUME TRANSMITTALS
COMMENT: ITR-1, 3.1.4 THIS EOI TO BE COMBINED WITH EOI 1026 AS AN ERROR A OR B.										
982	820206	DMD	5	820723	TES	PRR/CI	TES	RDC		TURB BLDG BLUME TRANSMITTALS
COMMENT: DELETE FROM ITR-1, 3.1.4 THIS EOI IS COMBINED WITH EOI 1026 AS AN ERROR A OR B.										
982	820206	DMD	6	820723	TES	CR.	NONE	RDC	NO	TURB BLDG BLUME TRANSMITTALS
COMMENT: SECTION 3.3.3 OF NOV. 12, 1981 PRELIMINARY SEISMIC REVERIFICATION REPORT STATES THAT DETAILED TRANSMITTALS WERE NOT REVIEWED BY RLCA. BUT SINCE THE TURBINE BUILDING IS BEING EVALUATED AS PART OF THE PG&E ITP, THIS EOI IS COMBINED INTO 1026 (ER/AB).										
983	820206	SID	0	820206	RLCA	PER/A	TES	RCW		RACEWAY SUPPORT SPECTRA
COMMENT: NINE OF TWENTY RACEWAY SUPPORT SEISMIC CALCULATIONS DONE WITH INAPPLICABLE SPECTRA.										
983	820206	SID	1	820421	TES	ER/A	PG&E	RCW		RACEWAY SUPPORT SPECTRA
COMMENT: ITR-1, 3.7.4 NINE OF TWENTY SUPPORT: CALCULATION DONE WITH INAPPLICABLE SPECTRA.										
983	820206	SID	2	820910	TES	ER/A	PG&E	RCW	YES	RACEWAY SUPPORT REANALYSIS
COMMENT: NINE OF TWENTY RACEWAY SUPPORT SEISMIC CALCULATIONS DONE WITH INAPPLICABLE SPECTRA. REV 2 ISSUED TO COMBINED EOI FILES 910 AND 930 INTO THIS ONE FILE AS A CLASS 'A' ERROR.										
983	820206	SID	3	830812	TES	OIR	RLCA	RCW	YES	RACEWAY SUPPORT REANALYSIS
COMMENT: RLCA TO REVIEW THE DCP COMPLETION PACKAGES AND SUBMIT A POTENTIAL RESOLUTION OR ERROR REPORT TO THE PROGRAM MANAGER.										
983	0		4	0						
COMMENT: SPACE RESERVED FOR LATER REVISION.										
983	0		5	0						
COMMENT: SPACE RESERVED FOR LATER REVISION.										
983	0		6	0						
COMMENT: SPACE RESERVED FOR LATER REVISION.										
984	820206	DMD	0	820206	RLCA	OIR	RLCA	RDC		TURB BLDG INTERFACE PROCEDURES
COMMENT: THE PG&E DESIGN REVIEW IS PRESENTED IN THE REPORT 'HOSGRI DESIGN VERIFICATION - TURBINE BUILDING', FEBRUARY, 1980 (LOG 7). SINCE THE DESIGN REVIEW DID NOT VERIFY THE INTERFACE PROCEDURES BETWEEN URS/BLUME, PG&E AND THE FIELD (FIG. 4-10-2, URS/BLUME REPORT ON DESIGN REVIEW, LOG 7), THESE WILL BE INVESTIGATED .										
984	820206	DMD	1	820618	RLCA	PPRR/OIP	TES	RDC		TURB BLDG INTERFACE PROCEDURES
COMMENT: BESIDES REV.0 CONCERN, THE BLUME INTERNAL REVIEW IDENTIFIED PROBLEMS WITH THE ANALYTICAL MODEL.										
984	820206	DMD	2	820701	TES	PRR/OIP	PG&E	RDC		TURB BLDG INTERFACE PROCEDURES
COMMENT: ITR-1, 3.1.4 AND PG&E ITEM 24 MAY INDICATE NEED FOR REANALYSIS. PREVIOUS PG&E DESIGN REVIEW DID NOT VERIFY PG&E/BLUME FIELD INTERFACE; THIS STILL REQUIRES VERIFICATION IF NO REANALYSIS IS DONE. TES REVIEWED RLCA NOV. 12 1981. PRELIMINARY REPORT.										
984	820206	DMD	3	820720	TES	OIR	RLCA	RDC		TURB BLDG INTERFACE PROCEDURES
COMMENT: ITR, 3.1.4 BASED ON PG&E INTERNAL TECHNICAL PROGRAM PRESENTED ON JULY 14 TO 16, 1982, PG&E MAY REANALYZE TURBINE BUILDING. TES AND RLCA WILL RECONSIDER AND RESOLVE THIS FILE.										
984	820206	DMD	4	820721	RLCA	PPRR/CI	TES	RDC		TURB BLDG INTERFACE PROCEDURES
COMMENT: ITR-1, 3.1.4 RLCA RECOMMENDS COMBINING THIS FILE WITH EOI 1026.										

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1002	820206	SID	4	820623	TES	PRR/CI	TES	CHK	NO	SUPPLY FANS S67, 68, & 69 INPUT

COMMENT: RLCA HAS REVIEWED CALCULATIONS ATTACHED TO PG&E ACTION SHEET OF 820310 AND ALSO VERIFIED THAT NO MODIFICATIONS HAVE BEEN MADE AS A RESULT OF THIS FILE.

1002	820206	SID	5	820623	TES	CR	NONE	CHK	NO	SUPPLY FANS S67, 68 & 69 INPUT

COMMENT: RLCA PRELIMINARY REPORT OF 811112 NOTED CALC'S FOR FANS USED UNCONSERVATIVE SEISMIC INPUT, ERROR B. PG&E PROVIDED NEW CALC. WITH PROPER INPUTS. IDVP VERIFIED NO MODIFICATION MADE AS RESULT OF THIS FILE.

1002	820206	SID	6	830308	TES	OIR	RLCA	CHK	NO	SUPPLY FANS S67, 68 & 69 INPUT

COMMENT: BASED ON PG&E RESPONSE AND RLCA VERIFICATION THAT NO MODS REQUIRED, RLCA SHOULD CONSIDER ISSUING POTENTIAL PROGRAM RESOLUTION REPORT WHERE ER/B IS DOWNGRADED TO ER/C AND FILE CLOSED OUT. REFER TO PAR. 5.1.2 OF 8301 IDVP SM. FOR PROCEDURE.

1002	820206	SID	7	830310	RLCA	PER/C	TES	CHK	NO	SUPPLY FANS S67, 68 & 69 INPUT

COMMENT: CALCS USED INCORRECT AND UNCONSERVATIVE SEISMIC INPUTS. ALSO, FORCED DRAFT SHUTTER DAMPER QUALIFICATION SHOWED INCORRECT SEISMIC DEFINITION BECAUSE GRAVITY WAS NOT ADDED TO VERTICAL ACCELERATION. STRESS CALCS USING CORRECT SEISMIC INPUTS AND DEFINITIONS DIDN'T EXCEED ALLOWABLES. DOWNGRADED FROM ER/B.

1002	820206	SID	8	830322	TES	ER/C	PG&E	CHK	NO	SUPPLY FANS S67, 68 & 69 INPUT

COMMENT: CALCS FOR SUPPLY FANS FOUND TO USED INCORRECT AND UNCONSERVATINE SEISMIC INPUTS.ALSO, GRAVITY NOT ADDED FOR SEISMIC CONSIDERATIONS OF FORCED DRAFT SHUTTER DAMPER QUAL. CALC STRESSES USING CURRENT SEISMIC INPUTS AND DEFINITIONS DIDN'T EXCEED ALLOWABLES. ER/B ESTABLISHED BY REV. 1 TO THIS FILE IS DOWNGRADED.

1002	820206	SID	9	830322	TES	CR	NONE	CHK	NO	SUPPLY FANS S67, 68 & 69 INPUT

COMMENT: CALCS FOR SUPPLY FANS FOUND TO USED INCORRECT AND UNCONSERVATINE SEISMIC INPUTS.ALSO, GRAVITY NOT ADDED FOR SEISMIC CONSIDERATIONS OF FORCED DRAFT SHUTTER DAMPER QUAL. CALC STRESSES USING CURRENT SEISMIC INPUTS AND DEFINITIONS DIDN'T EXCEED ALLOWABLES. ER/B ESTABLISHED BY REV. 1 TO THIS FILE IS DOWNGRADED TO AN ER/C.

1003	820206	OD	0	820206	RLCA	OIR	RLCA	RCW		4KV SW RM HVAC DUCT SUPT

COMMENT: HOSGRI DUCT SUPPORT QUALIFICATIONS HAVE NOT BEEN LOCATED AS OF 811028. TO BE ADDRESSED BY PG&E & REVIEWED BY RLCA.

1003	820206	OD	1	820607	RLCA	PPRR/OIP	TES	RCW		4KV SW RM HVAC DUCT SUPT

COMMENT: PG&E WILL SUPPLY THE ANALYSIS OF RECORD DATED PRIOR TO 811028

1003	820206	OD	2	820621	TES	PRR/OIP	PG&E	RCW		4 KV SW RM HVAC DUCT SUPT

COMMENT: PG&E TO SUPPLY THE ANALYSIS OF RECORD DATED PRIOR TO 811028

1003	820206	OD	3	820823	TES	OIR	RLCA	RCW		4 KV SW RM HVAC DUCT SUPT

COMMENT: RLCA TO REVIEW AND DISPOSITION ACCORDINGLY THE PG&E RESOLUTION & COMPLETION SHEETS, 820615

1003	820206	OD	4	820825	RLCA	PER/C	TES	RCW		4 KV SW RM HVAC DUCT SUPT

COMMENT: DUCT SUPPORT CALCS. DATED PRIOR TO 811028 DO NOT QUALIFY SUPPORT FOR AREA A (TURBINE BUILDING). DUCT SUPPORT WAS NOT EVALUATED FOR HOSGRI.

1003	820206	OD	5	821005	TES	ER/AB	PG&E	RCW	YES	HVAC DUCT SUPPORT REEVALUATION

COMMENT: REV. 4 WAS A PER/C. BASED ON 820917 SUBMITTAL OF DCP PHASE 1 FINAL REPORT IN WHICH DCP HAS STATED THAT HVAC SUPPORTS ARE BEING REANALYZED, IDVP PROGRAM REVIEW COMMITTEE ON 820929 DECIDED TO CHANGE THIS TO AN ERROR/A OR B. IDVP ALSO DECIDED TO COMBINE FILE 1077 WITH THIS FILE.

1003	820206	OD	6	830721	TES	OIR	RLCA	RCW		HVAC DUCT SUPPORT REEVALUATION

COMMENT: BASED ON IDVP VERIFICATION EFFORT OF CAP TO DATE, IDVP HAS ONLY ONE UNRESOLVED ISSUE, EOI 1134, WHICH WILL BE RESOLVED SEPARATELY. RLCA TO REVIEW AND RESOLVE FILE 1003, WITH EXCEPTION OF EOI 1134 ISSUE, IF POSSIBLE.

1003	820206	OD	7	830722	RLCA	PPRR/CI	TES	RCW		HVAC DUCT SUPPORT REEVALUATION

COMMENT: IDVP HAS VERIFIED THAT WITH THE EXCEPTION OF SPECIFIC ITEM DETAILED IN EOI 1134, WHICH WILL BE RESOLVED SEPARATELY, CAP FOR HVAC DUCT AND SUPPORTS IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF EOI 1003.

1003	820206	OD	8	830801	TES	PRR/CI	TES	RCW		HVAC DUCT SUPPORT REEVALUATION

COMMENT: THE IDVP HAS VERIFIED THAT EXCEPT FOR ISSUE IN EOI 1134, THE CAP FOR HVAC DUCT AND SUPPORTS IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF EOI 1003. EOI 1134 WILL BE RESOLVED SEPARATELY.

FILE NO.	DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1003	820204	OD	9	830801	IFS	CR	NONE	RCW	NO	HVAC DUCT SUPPORT REEVALUATION

COMMENT: DUCT SUPPORT CALCS DATED PRIOR TO 811028 WON'T QUALIFY SUPPORT FOR AREA A OF TURBINE BUILDING, DUCT SUPPORT NOT EVALUATED FOR HOSGRI. INCLUDES EOI 1077. IDVP VERIFIED, EXCEPT FOR ISSUE IN 1134, CAP FOR HVAC DUCT AND SUPPORTS IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF EOI 1003. EOI 1134 RESOLVED SEPARATELY. PREV ER/AB. CI.

1004	820206	OD	0	820206	RLCA	OIR	RLCA	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: RLCA PREL. REPORT 811112.ELECTRICAL EQUIPMENT AND INSTRUMENTATION.CONCERN ADDRESSED INSUFFICIENT TRANSMITTAL OF SEISMIC INFORMATION FROM PG&E TO WESTINGHOUSE.ONLY ONE TRANSMITTAL FOUND TO DATE:NEWMARK TIME HISTORIES FOR CONTAINMENT INTERIOR.

1004	820206	OD	1	820322	RLCA	PPRR/OIP	TES	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: RLCA RECOMMENDS THAT PG&E ASSEMBLE & CONTROL SPECTRA AND CHECK QUALIFICATIONS AGAINST THIS SPECTRA.

1004	820206	OD	2	820417	TES	PRR/OIP	PG&E	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: PG&E TO ASSEMBLE & CONTROL SPECTRA AND CHECK QUALIFICATIONS AGAINST THIS SPECTRA.

1004	820206	OD	3	820524	TES	OIR	RLCA	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: PG&E RESOLUTION SHT. 820521 WITH INDEX OF HOSGRI SPECTRA RECEIVED BY WESTINGHOUSE FROM PG&E. PG&E TRANSMITTED TO TES DOCUMENTATION THAT CONFIRMED THIS INDEX. WESTINGHOUSE AUDIT ON 820507 BY IDVP.

1004	820206	OD	4	820609	RLCA	PPRR/CI	TES	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: BASED ON PG&E TRANSMITTAL DCVP-TES-72 AND THE IDVP WESTINGHOUSE AUDIT ON 820507, TES INFORMED RLCA THAT SEISMIC INTERFACE BETWEEN PG&E AND WESTINGHOUSE IS VERIFIED.

1004	820206	OD	5	820622	TES	PRR/CI	TES	RW		PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: BASED ON PG&E TRANSMITTAL DCVP-TES-72 AND THE IDVP WESTINGHOUSE AUDIT ON 820507
TES CONCLUDED THAT THE SEISMIC INTERFACE BETWEEN PG&E AND WESTINGHOUSE IS VERIFIED.

1004	820206	OD	6	820622	TES	CR	NONE	RW	NO	PG&E-WESTINGHOUSE SEISMIC INTERFACE.

COMMENT: ELECTRICAL EQUIPMENT AND INSTRUMENTATION. CONCERN ADDRESSED INSUFFICIENT TRANSMITTAL OF SEISMIC INFORMATION FROM PG&E TO W. BASED ON PG&E TRANSMITTAL DCVP-TES-72 AND THE IDVP WESTINGHOUSE AUDIT ON 820507, TES CONCLUDED THAT THE SEISMIC INTERFACE BETWEEN PG&E AND WESTINGHOUSE IS VERIFIED.

1005	820206	OD	0	820206	RLCA	OIR	RLCA	RRB		WYLE LABS TRANSMITTAL OF SPECTRA

COMMENT: DOCUMENTATION REQUIRED REGARDING FORMAL TRANSMITTAL OF SPECTRA FROM PG&E TO WYLE LABS.

1005	820206	OD	1	820309	RLCA	PPRR/CI	TES	RRB		WYLE LABS TRANSMITTAL OF SPECTRA

COMMENT: NO DOCUMENTATION FOUND TO DATE REGARDING FORMAL TRANSMITTAL OF SPECTRA BUT CONCERN COVERED BY EOI'S 1013 & 1049.

1005	820206	OD	2	820417	TES	CR	NONE	RRB	NO	WYLE LABS TRANSMITTAL OF SPECTRA

COMMENT: ALTHOUGH NO DOCUMENTATION OF FORMAL TRANSMITTAL OF SPECTRA FROM PG&E TO WYLE HAS BEEN FOUND TO DATE, THIS CONCERN IS COVERED BY EOI'S 1013 & 1049.

1006	820206	OD	0	820206	RLCA	OIR	RLCA	CHK		ELEC EQUIP QUAL. BY ANALYSIS

COMMENT: FOR EQUIPMENT REQUALIFIED BY ANALYSIS, AS INDICATED BY NOTE 5 IN TABLE 10-1 OF HOSGRI, NO INFORMATION HAS BEEN FOUND TO DATE AS TO WHO HAD PERFORMED THESE ANALYSES. THIS IS BEING COVERED GENERICALLY BY RLCA IN THE CURRENT PROGRAM.

1006	820206	OD	1	820309	RLCA	PPRR/CI	TES	CHK		ELEC EQUIP QUAL BY ANALYSIS

COMMENT: THE PHASE I PROGRAM INCLUDES TWO ELECTRICAL CABINETS QUALIFIED BY ANALYSIS.

1006	820206	OD	2	820421	TES	CR	NONE	CHK	NO	ELEC EQUIP QUAL BY ANALYSIS

COMMENT: FOR EQUIPMENT REQUALIFIED BY ANALYSIS, AS INDICATED BY NOTE 5 IN TABLE 10-1 OF HOSGRI, NO INFORMATON HAS BEEN FOUND TO DATE AS TO WHO HAD PERFORMED THESE ANALYSES. THE PHASE I PROGRAM INCLUDES TWO ELECTRICAL CABINETS QUALIFIED BY ANALYSIS.

1007	820206	SID	0	820206	RLCA	OIR	RLCA	CHK		ELEC EQUIP TRANSMITTAL OF INFO

COMMENT: SHOULD FURTHER INVESTIGATION FAIL TO UNCOVER RECORDS THAT UNSATISFACTORILY DOCUMENT THE TRANSFER OF SEISMIC REQUALIFICATION INFORMATION BETWEEN PG&E AND THEIR CONSULTANTS, THE ACTUAL TEST SPECTRA AND THE REQUALIFICATION ANALYSES WILL BE EXAMINED TO SEE IF APPLICABLE SEISMIC INFORMATION WAS APPLIED.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1020	820218	SID	2	820417	TES	PRR/DEV	PG&E JCT			AUX SALTWATER PUMP PRELIM SPECT.INTAKE STRUCT.
COMMENT: PRELIMINARY SPECTRA IDENTICAL TO HOSGRI SPECTRA CONFIRMED, TES TRIP REPORT NO 1449.										
1020	820218	SID	3	820629	TES	CR	NONE JCT	NO		AUX SALTWATER PUMP PRELIM SPECT.INTAKE STRUCT.
COMMENT: UNCONTROLLED PRELIMINARY SPECTRA USED TO QUALIFY PUMP, PG&E FILE 116.3, 771227. IDENTICAL TO HOSGRI SPECTRA,PG&E COMPLETION REPORT 820601. DEVIATION.										
1021	820218	OD	0	820218	RLCA	OIR	RLCA RDF			CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: PG&E PIPING ANALYSIS 4.3 SHOWS COMPONENT COOLING WATER HEAT EXCHANGER AS RIGID; HOSGRI (TABLE 7-5) LISTS NATURAL FREQ. OF 9 Hz. (HORIZONTAL AND VERTICAL) FOR THIS HX. THE MODELING OF A NONRIGID PIECE OF EQUIPMENT AS A RIGID ANCHOR MAY NOT BE CONSERVATIVE.										
1021	820218	OD	1	820430	RLCA	PPRR/OIP	TES	RDF		CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: PER PG&E SEMI-MONTHLY OPEN ITEM #22- PG&E WILL EXAMINE THE RIGID MODELING OF THE CCWHX IN THE PIPING ANALYSIS.										
1021	820218	OD	2	820510	TES	PRR/OIP	PG&E RDF			CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: ITR-1, 3.2.4 PG&E PIPING ANALYSIS 4-3 DATED 1/30/80. HOSGRI REPORT TABLE 7-5. THE NATURAL FREQUENCY OF THE CCW HEAT EXCHANGER IS LESS THAN THE MINIMUM REQUIREMENT FOR PIPING MODEL TERMINATION. PG&E SHOULD EXAMINE THIS PROBLEM.										
1021	820218	OD	3	820910	TES	OIR	RLCA RDF			CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: BASED ON PG&E PRESENTATIONS (AUGUST 6,1982 AND AUGUST 26, 1982) OF THEIR INTERNAL TECHNICAL PROGRAM OF PIPING; TES AND RLCA WILL RECONSIDER COMBINING THIS FILE WITH FILES 961,1058,1059 & 1098 INTO ONE ERROR CLASS A OR B FILE.										
1021	820218	OD	4	820913	RLCA	PPRR/CI	TES	RDF		CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: BASED ON PG&E PRESENTATIONS (AUG 6 AND AUG 26, 1982) OF THEIR INTERNAL TECHNICAL PROGRAM OF PIPING, THIS FILE COMBINED WITH FILES 961, 1058, 1059, AND 1098 INTO ONE ERROR CLASS A OR B FILE. SEE FILE 1098 FOR ERROR REPORT.										
1021	820218	OD	5	820921	TES	PRR/CI	TES	RDF		CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: PG&E PIPING ANALYSIS 4-3(800130), HOSGRI REPORT TABLE 7-5, THE NATURAL FREQUENCY OF THE CCW HEAT EXCHANGER IS LESS THAN THE MINIMUM REQUIREMENT OF PIPING MODEL TERMINATION. THIS FILE HAS BEEN COMBINED INTO FILE 1098 AND HAS BEEN DESIGNATED AS ERROR A/B.										
1021	820218	OD	6	820921	TES	CR	NONE RDF	NO		CCWHX ANALYSIS AS RIGID ANCHOR. TURBINE BLDG.
COMMENT: PG&E PIPING ANAL #4-3(REV 16,3/4/80)REPRESENTS THE COMPONENT COOLING WATER HEAT EXCH. AS A RIGID ANCHOR. THE HOSGRI RPT. (TABLE 7-5)LISTS NATURAL FREQ. OF 9 HERTZ(HORIZ & VERT)FOR THIS HEAT EXCH.THE MODELING OF A NONRIGID PIECE OF EQUIP.AS A RIGID ANCHOR MAY NOT BE CONSERVATIVE. THIS FILE COMB.INTO FILE 1098 & DESIGNATED AS ERROR A/B.										
1022	820218	SID	0	820218	RLCA	OIR	RLCA RDC			INTAKE STRUCTURE REEVALUATION.
COMMENT: SPECTRA AT 2.1' USED 8'-9',SPECTRA APPLICABLE AT A LEVEL TEN FEET. BELOW UPPER PUMP SUPPORT WERE USED; NOT CONSERVATIVE.										
1022	820218	SID	1	820430	RLCA	PPRR/OIP	TES	RDC		INTAKE STRUCTURE REEVALUATION.
COMMENT: PG&E TO EVALUATE SPECTRA USED.										
1022	820218	SID	2	820510	TES	PRR/OIP	PG&E RDC			INTAKE STRUCTURE REEVALUATION.
COMMENT: ITR-1 3.5.5.4 AND 3.9.4 PG&E ASSEMBLE SPECTRA,SPECTRA AT 2.1' USED 8'-9',SPECTRA APPLICABLE AT A LEVEL TEN FEET. BELOW UPPER PUMP SUPPORT WERE USED; NOT CONSERVATIVE. PG&E TO EVALUATE SPECTRA USED.										
1022	820218	SID	3	820903	TES	OIR	RLCA RDC			INTAKE STRUCTURE REEVALUATION.
COMMENT: COMBINE WITH FILES 967 & 988 RELATIVE TO EVALUATION OF INTAKE STRUCTURE SEISMIC SPECTRA. PG&E TO REANALYZE INTAKE STRUCTURE.										
1022	820218	SID	4	820907	RLCA	PER/AB	TES	RDC		INTAKE STRUCTURE REEVALUATION.
COMMENT: REANALYSIS OF INTAKE STRUCTURE PERFORMED BY PG&E, 820806 & 820901. COMBINE THIS ITEM WITH EOI 967 & 988.										
1022	820218	SID	5	820910	TES	ER/AB	PG&E RDC			INTAKE STRUCTURE REEVALUATION.
COMMENT: SPECTRA AT 2.1' USED 8'-9',SPECTRA APPLICABLE AT A LEVEL TEN FEET. BELOW UPPER PUMP SUPPORT WERE USED; NOT CONSERVATIVE. INTAKE STRUCTURE IN REANALYSIS IN PG&E INTERNAL TECHNICAL PROGRAM COMBINE EOI 967 & 988 IN TO 1022.										

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1022	820218	SID	6	830723	TES	OIR	RLCA	RDC		INTAKE STRUCTURE REEVALUATION.

COMMENT: UPPER AUX SALT WATER PUMP SUPPORT LOCATED 10' ABOVE ELEVATION -2.1'. SPECTRA FOR -2.1' USED AS INPUT FOR UPPER PUMP SUPPORT. SPECTRA MAY NOT BE APPLICABLE. RLCA TO REVIEW DCP RE-EVALUATION OF INTAKE STRUCTURE BEING PERFORMED.

1022	820218	SID	7	830723	RLCA	PPRR/CI	TES	RDC		INTAKE STRUCTURE REEVALUATION.

COMMENT: IDVP HAS VERIFIED THAT WITH EXCEPTION OF SOILS WORK, WHICH WILL BE RESOLVED SEPARATELY, CAP FOR INTAKE STRUCTURE IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF THIS EOI.

1022	820218	SID	8	830726	TES	PRR/CI	TES	RDC		INTAKE STRUCTURE REEVALUATION.

COMMENT: FILE REDEFINED TO TRACK DCP RE-EVALUATION BEING PERFORMED AS PART OF CAP. IDVP VERIFIED THAT WITH EXCEPTION OF SOILS WORK, WHICH WILL BE RESOLVED SEPARATELY, CAP FOR INTAKE STRUCTURE IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF THIS EOI.

1022	820218	SID	9	830726	TES	CR	NONE	RDC	NO	INTAKE STRUCTURE REEVALUATION.

COMMENT: UPPER AUX SALT WATER PUMP SUPPORT LOCATED 10' ABOVE ELEVATION -2.1'. SPECTRA FOR -2.1' USED AS INPUT FOR UPPER PUMP SUPPORT. IDVP HAS VERIFIED THAT WITH EXCEPTION OF SOILS WORK, WHICH WILL BE RESOLVED SEPARATELY, CAP FOR INTAKE STRUCTURE IS AN ACCEPTABLE AND PROPERLY IMPLEMENTED PROGRAM FOR RESOLUTION OF THIS EOI. INCLUDES EOI'S 967 & 988. WAS AN ER/AB. CI

1023	820219	OD	0	820219	RLCA	OIR	RLCA	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: PG&E DWG. 447119, REV.12 AND PIPING SCHEM. 102003, SHEET 4, REV.9 REFERS TO ITEM 15 ON 102039. THIS DWG.102039, SHT. 41, REV.9 SHOWS 3 IN. VELAN VALVE TO BE DESCRIBED ON DWG. 663317-52. ONLY 4 & 6 IN. VELAN VALVES ARE DESCRIBED HERE.

1023	820219	OD	1	820322	RLCA	PPRR/DEV	TES	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: RLCA RECOMMENDED PG&E CHECK DOCUMENTATION ON ALL VALVES. FOLLOWING PG&E ACTION, RLCA WILL SELECTIVELY VERIFY VALVE DOCUMENTATION.

1023	820219	OD	2	820417	TES	PRR/OIP	PG&E	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: PG&E TO CHECK THE DOCUMENTATION ON ALL VALVES. FOLLOWING PG&E ACTION, RLCA WILL SELECTIVELY VERIFY VALVE DOCUMENTATION.

1023	820219	OD	3	820707	TES	OIR	RLCA	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: ITR-1, 3.2.4, RLCA TO REVIEW INFORMATION SENT BY PG&E IN RESPONSE TO RLCA'S 820414 REQUEST.

1023	820219	OD	4	820713	RLCA	PPRR/CI	TES	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: DELETE FROM ITR-1, 3.2.4, RLCA HAS REVIEWED THE INFORMATION REQUIRED TO MODEL THE AFW VALVE.

1023	820219	OD	5	820717	TES	PRR/CI	TES	RDF		3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: DC 66317-52-1, DC663317-4-3, 102003, SHEET 4, REV.9, PG&E VALVE INVENTORY NO. 102039, PG&E PIPING ISO 447119,REV.12. RLCA HAS RECEIVED THE INFORMATION REQUIRED TO MODEL THE AFW VALVE.

1023	820219	OD	6	820717	TES	CR	NONE	RDF	NO	3" VALVE DOCUM. LINES 577 & 578, AUX. BLDG.

COMMENT: RLCA WAS NOT ABLE TO OBTAIN INFORMATION FOR A 3 IN. VELAN VALVE. THIS VALVE IS REFERED TO AS ITEM 15 ON THE AUX. FW.ISO 447119 REV.12. THE REQUIRED VALVE DRAWING 663317-4-3 WAS LATER SENT BY PG&E TO RLCA.

1024	820220	FID	0	820220	RLCA	OIR	RLCA	RDF		PIPE SUPT. MOMEN.LINE 1917,AUX BUILDING.

COMMENT: PG&E MAKE-UPWATER ISO 449317, REV.3 MISLABELS SUPPORT 85S-40V AS 85S-40R.

1024	820220	FID	1	820520	RLCA	PPRR/CI	TES	RDF		PIPE SUPT. MOMEN.LINE 1917,AUX BUILDING.

COMMENT: SEVERAL LINES ARE SUPPORTED BY THIS RESTRAINT: 5 RIGID AND ONE BY A SPRING HANGER. THIS ITEM WILL BE COVERED BY A REVIEW OF THE 79-14 PROGRAM.

1024	820220	FID	2	820607	TES	PRR/CI	TES	RDF		PIPE SUPT. MOMEN.LINE 1917,AUX BUILDING.

COMMENT: PG&E PIPING ISO 449317, REV.3 PG&E DRAWING 049272, SHEETS 44,44A,45 THROUGH 45D.SUPPORT DW IS LABELED 85S-40V (SPRING HANGER) YET SUPPORT IS ACTUALLY A RIGID Y FOR LINE 1917-4. SEVERAL LINES ARE SUPPORTED BY THIS RESTRAINT: 5 RIGIDLY AND ONE BY SPRING HANGER.THIS ITEM WILL BE COVERED BY A REVIEW OF THE 79-14 PROGRAM.

1024	820220	FID	3	820607	TES	CR	NONE	RDF	NO	PIPE SUPT. MOMEN.LINE 1917,AUX BUILDING.

COMMENT: ISO 449317 R3 SHOWS SUPPORT 85S/40R (RIGID). THE DESIGN ANALYSIS FOR THIS SUPPORT IS LABELED 80S/40V (SPRING). SEVERAL LINES ARE SUPPORTED BY THIS RESTRAINT: 5 RIGIDLY AND ONE BY SPRING. DRAWING 049272 SHT. 44;44A;45A THRU 45D CONFIRMS SUPPORT FUNCTION. CLOSED ITEM.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1068	820315	QAR	1	820524	TES	CR	NONE MAR		NO	URS/BLUME QA FINDINGS

COMMENT: NO QA PROGRAM, IN CONFORMANCE WITH 10CFR50 APPENDIX B, WAS IMPLEMENTED, RESULTING IN LACK OF FORMAL DESIGN CONTROL. TO BE REPLACED BY EOI 3005. CLOSED ITEM.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	0	820315	RLCA	OIR	RLCA	RDF		VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: PG&E AFW ISO 447119, REV.12 SHOWS VALVES LCV 113 & 115 UNSUPPORTED. RLCA FIELD INSPECTION CONFIRMED THIS. PG&E ANALYSIS 2-14, COMPUTER DATE 1/16/82 INDICATES SUPPORTS HAVE BEEN ADDED TO VALVES. RLCA TO COMPLETE VERIFICATION BASED ON ORIGINAL FIELD INFORMATION, WITH SUBSEQUENT CONSIDERATION OF REVISIONS.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	1	820426	RLCA	PPRR/CI	TES	RDF		VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: PG&E CONFIRMED ADDITION OF NEW SUPPORTS TO VALVES AND PROVIDED 1981 ANALYSIS. EOI 1071 REPORTS OVERSTRESS IN THIS PIPING ANALYSIS.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	2	820511	TES	OIR	RLCA	RDF		VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: TES RECOMMENDS THAT FILE 1069, REV.0, BE RESOLVED EXCLUSIVELY BASED ON THE REVIEW OF THE PG&E 1981 ANALYSIS, PG&E REASONS FOR THE CHANGES AND THE ADDITION OF THE NEW SUPPORTS TO VALVES LCV113 AND LCV115 RATHER THAN CLOSED OUT AND TRANSFERRED TO FILE 1071 FOR EVENTUAL RESOLUTION.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	3	820517	RLCA	PER/A	TES	RDF		VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: LACK OF SUPPORTS ON VALVE OPERATOR CAUSES OVERSTRESS IN RLCA PIPING ANALYSIS 109. PG&E IN PROCESS OF ADDING SUPPORTS. ADDITIONAL SUPPORTS TO BE FIELD VERIFIED BY RLCA. RLCA 109 WAS RERUN WITH SUPPORTS ON VALVE OPERATOR (K15YCVF) TO SHOW STRESSES BELOW ALLOWABLE. PG&E PIPING ANALYSIS 2-4 DATED 1-16-82 INDICATE SUPPORTS ON VALVE OPERATOR.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	4	820607	TES	ER/A	PG&E	RDF		VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: PG&E PIPING ISO 447119, R.12, PIPING ANALYSES 2-14 (7/26/77 & 1/16/82). RLCA PIPING ANALYSIS RLCA 109 SEQ. #S K15VFU3 & K15YCVF (3/19/82 & 5/9/82). PG&E LTR. DCVP-RLCA-67 (4/23/82). PG&E DWG. 049264, SHEETS 157-169. VERIF. ANALYSIS FAILS STRESS EQUATIONS DUE TO UNSUP. VALVE OPERATORS. THE ADDI. OF SUPT. ON VALVE OPERATOR RESULTS IN ACCEPTABLE STRESSES.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	5	820630	TES	ER/A	PG&E	RDF	YES	VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: PG&E TO ADD SUPPORTS AND TO ASK VALVE SUPPLIER FOR VALVE QUALIFICATION FOR SUPPORTS ON VALVE OPERATOR.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	6	830625	TES	OIR	RLCA	RDF	YES	VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: DCP COMPLETION SHEET DATED 830620 INDICATED THAT SUPPORTS HAVE BEEN ADDED TO LCV-113 AND LCV-115 VALVE OPERATORS AND VALVES HAVE BEEN QUALIFIED WITH THE SUPPORTS. RLCA TO VERIFY SUPPORT ADDITION AND REVIEW DCP VALVE QUALIFICATION.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	7	830712	RLCA	PPRR/CI	TES	RDF	YES	VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: DCP COMP. SHEET DATED 830620 INDICATES THAT SUPPORTS HAVE BEEN ADDED TO LCV-113 AND LCV-115 VALVE OPERATORS AND VALVES HAVE BEEN QUALIFIED WITH SUPPORTS. RLCA HAS FIELD VERIFIED ADDITION OF THESE SUPPORTS.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	8	830715	TES	PRR/CI	TES	RDF	YES	VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: DCP COMP. SHEET DATED 830620 INDICATES THAT SUPPORTS HAVE BEEN ADDED TO LCV-113 AND LCV-115 VALVE OPERATORS AND VALVES HAVE BEEN QUALIFIED WITH SUPPORTS. RLCA HAS FIELD VERIFIED ADDITION OF THESE SUPPORTS.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1069	820315	FID	9	830715	TES	CR	NONE	RDF	YES	VALVE LCV 113/115 UNSUPT. AFW LINES 577/578 AUX. B.

COMMENT: PG&E AFW ISO 447119, R.2 SHOWS VALVES LCV-113 & 115 UNSUPPORTED. DCP COMPLETION SHEET DATED 830620 INDICATED THAT SUPPORTS HAVE BEEN ADDED TO LCV-113 AND LCV-115 VALVE OPERATORS AND VALVES HAVE BEEN QUALIFIED WITH SUPPORTS. RLCA HAS FIELD VERIFIED ADDITION OF THESE SUPPORTS. PREVIOUSLY AN ERROR CLASS A. CLOSED ITEM.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1070	820315	DMD	0	820315	RLCA	OIR	RLCA	RDC		AUX. BLDG. HORIZONTAL SOIL SPRING CALC.

COMMENT: ITR-1, 3.1.4 AUXILIARY BUILDING RLCA TO COMPLETE MCNEILL WORK. THE HORIZONTAL SOIL SPRING INDEPENDENTLY CALCULATED BY RLCA DIFFERS FROM THE URS/BLUME SOIL SPRING BY 50% .

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1070	820315	DMD	1	820721	RLCA	PPRR/CI	TES	RDC		AUX. BLDG. HORIZONTAL SOIL SPRING CALC.

COMMENT: DELETE FROM ITR-1, 3.1.4 RLCA RECOMMENDS THAT THIS FILE BE COMBINED WITH EOI 1097.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1098	820714	ICD	5	820922	TES	ER/AB	PG&E RDF			PIPING REEVALUATION.

COMMENT: BASED ON PG&E PRESENTATIONS OF THEIR TECHNICAL PROGRAM, THIS FILE IS COMBINED WITH FILES 961, 1021, 1058,1059, 1060 AND 1104 AS AN ERROR CLASS A OR B. THE INCLUSION OF FILES 1060 AND 1104 INTO THIS FILE WAS ACHIEVED BY PROGRAM REVIEW COMMITTEE ACTION . ALL CONCERNS OF THE ABOVE MENTIONED FILES WILL BE REVIEWED UNDER THIS FILE.

1098	820714	ICD	6	830120	TES	ER/AB	PG&E RDF			PIPING REEVALUATION.

COMMENT: BASED ON PG&E PRESENT. OF THEIR TECHNICAL PROGRAM, THIS FILE IS COMBINED W/FILES 961, 1021, 1058,1059,1060 & 1104 AS AN ER A/B. THE INCLUSION OF FILES 1060 AND 1104 INTO THIS FILE WAS ACHIEVED BY PROGRAM REVIEW COMMITTEE ACTION.ALL CONCERNS OF THE ABOVE MENTIONED FILES WILL BE REVIEWED HERE. REV 6 WAS ISSUED TO REFLECT INCLUSION OF FILE 6001.

1098	820714	ICD	7	830225	TES	ER/AB	PG&E RDF	YES		PIPING REEVALUATION.

COMMENT: BASED ON PG&E PRESENT. OF THEIR TECH. PROGRAM, THIS FILE IS COMBINED W/FILES 961,1021,1058,1059,1060&1104 AS AN ER/A/B THE INCL OF FILES 1060 & 1104 INTO THIS FILE WAS ACHIEVED BY PROG REVIEW COMMITTEE ACTION. ALL CONCERNS OF THE ABOVE FILES WILL BE REVIEWED HERE. REV 6 WAS ISSUED TO REFLECT INCL OF 6001.REV 7 ISSUED TO REFLECT INCL OF 1115 & 6002.

1098	820714	ICD	8	830627	TES	ER/AB	PG&E RDF	YES		PIPING REEVALUATION.

COMMENT: BASED ON PG&E PRESENT. OF THEIR TECH. PROGRAM, THIS FILE IS COMBINED W/FILES 961,1021,1058,1059,1060 & 1104 AS AN ER/AB THE INCL OF FILES 1060 & 1104 INTO THIS FILE WAS ACHIEVED BY PROG REVIEW COM ACTION. ALL CONCERNS OF THE ABOVE FILES WILL BE REVIEWED HERE. REV 6 ISSUED TO REFLECT INCL OF 6001. REV 7 ISSUED TO REFLECT INCL OF 1115 & 6002. REV. 8 - 1126.

1098	820714	ICD	9	830706	TES	ER/AB	PG&E RDF	YES		PIPING REEVALUATION.

COMMENT: BASED ON PG&E PRESENT. OF THEIR TECH. PROGRAM, THIS FILE IS COMBINED W/FILES 961,1021,1058,1059,1060 & 1104 AS AN ER/AB THE INCL OF FILES 1060 & 1104 INTO THIS FILE WAS ACHIEVED BY PROG REVIEW COM ACTION. ALL CONCERNS OF THE ABOVE FILES WILL BE REVIEWED HERE. REV 6 - INCL OF 6001. REV 7 ISSUED TO REFLECT INCL OF 1115 & 6002. REV. 8 - 1126. REV. 9 - 1137.

1098	0		10	0						

COMMENT: SPACE RESERVED FOR LATER REVISIONS..

1098	0		11	0						

COMMENT: SPACE RESERVED FOR LATER REVISIONS.

1099	820804	FID	0	820804	RLCA	OIR	RLCA PPR			COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: DRAWING SHOWS 3/4" STIFFENER PLATES ON NORTH SIDE OF FIXED END SUPPORT; FIELD VERIFICATION DOES NOT SHOW THESE PLATES ON HX # 1-2.

1099	820804	FID	1	820816	RLCA	PPRR/OIP	TES PPR			COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: PG&E TO ESTABLISH GEOM. CONSIDERED BY DES. ANAL. & DETERMINE REASONS FOR DIFFERENCES BETWEEN SUPPORTS.

1099	820804	FID	2	820820	TES	PRR/OIP	PG&E PPR	NO		COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: BASIS : TES REVIEW OF GEOM. DIFF. W/ RLCA, REVIEW OF RLCA BASIS FOR FINDING (PG&E FILES) & REVIEW OF 1099-1 ; TES MEMO 820819. PG&E TO ESTABLISH THE SUPPORT CONFIGURATION REPRESENTED BY THE DESIGN ANALYSIS AND DETERMINE THE REASONS FOR THE DIFFERENCES BETWEEN THE TWO SUPPORTS.

1099	820804	FID	3	821104	TES	OIR	RLCA PPR			COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: RLCA AND TES TO ASCERTAIN VALIDITY OF PG&E COMPLETION SHEET AND VERIFY THAT THE ADDED PLATES OF CCWHX # 1-2 HAVE BEEN DESIGNED FOR HOSGRI. DESIGN CALCS. FOR ALTERNATE "SHEAR RESTRAINT" HAVE BEEN FOUND IN PG&ES RESPONSE TO TES RFI 0108 (DCVP - TES 418 DATED 821006).

1099	820804	FID	4	830216	RLCA	PPRR/DEV	TES PPR			COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: PG&E DRAWING 463683 REV. 6 SHOWS 3/4" STIFFNER PLATES ON NORTH SIDE OF FIXED SUPPORT. RLCA FIELD VERIFICATION SHOWS NORTH SIDE OF FIXED END SUPPORT OF HX 1-2 DOESN'T INCLUDE THESE. HX 1-1 DOES. DESIGN ANALYSIS NOT AFFECTED; SIMPLIFIED MODEL DOESN'T INCLUDE THESE PLATES. DRAWING HAS BEEN REVISED.

1099	820804	FID	5	830225	TES	PRR/DEV	TES PPR			COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: PG&E DRAWING 463683 REV. 6 SHOWS 3/4" STIFFNER PLATES ON NORTH SIDE OF FIXED SUPPORT. RLCA FIELD VERIFICATION SHOWS NORTH SIDE OF FIXED END SUPPORT OF HX 1-2 DOESN'T INCLUDE THESE. HX 1-1 DOES. DESIGN ANALYSIS NOT AFFECTED; SIMPLIFIED MODEL DOESN'T INCLUDE THESE PLATES. DRAWING HAS BEEN REVISED.

1099	820804	FID	6	830225	TES	CR	NONE PPR	NO		COMPONENT COOLING WATER HEAT EXCH. TURBINE BLDG.

COMMENT: PG&E DRAWING 463683 REV. 6 SHOWS 3/4" STIFFNER PLATES ON NORTH SIDE OF FIXED SUPPORT. RLCA FIELD VERIFICATION SHOWS NORTH SIDE OF FIXED END SUPPORT OF HX 1-2 DOESN'T INCLUDE THESE. HX 1-1 DOES. DESIGN ANALYSIS NOT AFFECTED; SIMPLIFIED MODEL DOESN'T INCLUDE THESE PLATES. DRAWING HAS BEEN REVISED. DEVIATION.

1100	820816	OD	0	820816	RLCA	OIR	RLCA RDC			HLA SOIL REVIEW OUTDOOR WATER STORAGE TANKS.

COMMENT: HLA FIELD LOG OF BORING # 11 (820208) INDICATES TWO FIREWATER TANKS ; THERE SHOULD ONLY BE ONE FIREWATER TANK;

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1120	830322	FID	1	830322	RLCA	PER/B	TES	CHK		CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: DESIGN ANALYSIS HV-4.1 SHOWS 3/4" EXT. HOUSING MOUNTING BOLTS USED IN EARLIER EDS CALC. IDVP FIELD CHECK SHOWS BOLTS TO BE 1/2". IDVP FACTORED BOLT STRESS IN D.A. BY DIFFERENCE IN BOLT SIZE (3/4" VS. 1/2"). RESULTANT BOLT STRESS EXCEEDS ALLOWABLE. DCP HAS REVISED D.A. AS A RESULT OF IDVP FIELD VERIFICATION TO SHOW BOLT STRESS TO BE BELOW ALLOWABLE.

1120	830322	FID	2	830405	TES	ER/B	PG&E	CHK		CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: DESIGN ANALYSIS SHOWS 3/4" EXTERIOR HOUSING MOUNTING BOLTS USED IN EARLIER EDS CALC WERE ACCEPTED IN PH I DCP CAP. IDVP FOUND 1/2" BOLTS AND FACTORED BOLT STRESS BY DIFFERENCE IN BOLT SIZE. STRESS EXCEEDS ALLOWABLE. DCP HAS REVISED D.A. AND ABLE TO SHOW STRESSES BELOW ALLOWABLE.

1120	830322	FID	3	830420	TES	OIR	RLCA	CHK		CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: ADVERSE EFFECT OF LOWER BOLT SIZE ON STRESS COMPENSATED FOR BY INCREASED NUMBER OF BOLTS AND OVERALL BOLT SPACING. TES RECOMMENDS RLCA TO REVIEW THIS FILE AND CONSIDER DOWNGRADING IT FROM AN ER/B TO AN ER/C.

1120	830322	FID	4	830429	RLCA	PER/C	TES	CHK		CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: ORIGINAL EDS CALC SHOWED FOUR 3/4" MOUNTING BOLTS. FIELD SHOWS 1/2". HOWEVER, ADVERSE EFFECT OF SMALLER BOLT SIZE COMPENSATE BY ACTUAL FIELD CONFIGURATION (6 MOUNTINGS AS OPPOSED TO 4 IN DESIGN ANALYSIS) DOWNGRADED FROM ER/B TO ER/C SINCE CRITERIA OR LIMITS HAVEN'T BEEN EXCEEDED.

1120	830322	FID	5	830504	TES	ER/C	PG&E	CHK		CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: ORIGINAL EDS CALC SHOWED FOUR 3/4" MOUNTING BOLTS. FIELD SHOWS 1/2". HOWEVER, ADVERSE EFFECT OF SMALLER BOLT SIZE COMPENSATE BY ACTUAL FIELD CONFIGURATION (6 MOUNTINGS AS OPPOSED TO 4 IN DESIGN ANALYSIS) DOWNGRADED FROM ER/B TO ER/C SINCE CRITERIA OR LIMITS HAVEN'T BEEN EXCEEDED.

1120	830322	FID	6	830507	TES	CR	NONE	CHK	NO	CONDENSORS CR-35 (PHASE I DCP CORRECTIVE ACTION)

COMMENT: ORIGINAL EDS CALC SHOWED FOUR 3/4" MOUNTING BOLTS. FIELD SHOWS 1/2". HOWEVER, ADVERSE EFFECT OF SMALLER BOLT SIZE COMPENSATE BY ACTUAL FIELD CONFIGURATION (6 MOUNTINGS AS OPPOSED TO 4 IN DESIGN ANALYSIS) DOWNGRADED FROM ER/B TO ER/C SINCE CRITERIA OR LIMITS HAVEN'T BEEN EXCEEDED.

1121	830506	FID	0	830506	RLCA	OIR	RLCA	CHK		BOLT SIZE, FILTER UNIT - 39.

COMMENT: DESIGN ANALYSIS HV-5.11, R. 0 SHOWS ANCHOR BOLT SIZE OF 5/8" BETWEEN CONCRETE SLAB AND WIDE FLANGE BASE BEAM. FIELD SHOWS 1/2" DIAMETER. RLCA TO DETERMINE SIGNIFICANCE. WILL BE EXAMINED W/1096 AND 1120 FOR POSSIBLE GENERIC CONCERN RE: HVAC COMPONENT HOLD DOWN BOLT SIZE.

1121	830506	FID	1	830608	RLCA	PER/C	TES	CHK		BOLT SIZE, FILTER UNIT - 39.

COMMENT: DCP REVISED ANALYSIS SHOWS BOLTS TO MEET ALLOWABLES AND DESIGN CRITERIA. RESULT OF THIS EOI, 1096 AND 1020, POSSIBLE GENERIC CONCERN, EVEN THOUGH NO OVERSTRESS. RLCA WILL REVIEW DCP BOLT SIZE PROGRAM AND SPECIFIC SAMPLE OF CL. I HOLD-DOWN BOLTS.

1121	830506	FID	2	830610	TES	ER/C	PG&E	CHK		BOLT SIZE, FILTER UNIT - 39.

COMMENT: DCP REVISED ANALYSIS SHOWS BOLTS TO MEET ALLOWABLES AND DESIGN CRITERIA. RESULT OF THIS EOI, 1096 AND 1020, POSSIBLE GENERIC CONCERN, EVEN THOUGH NO OVERSTRESS. RLCA WILL REVIEW DCP BOLT SIZE PROGRAM AND IF DEEMED NECESSARY, A SPECIFIC SAMPLE OF CL. I HOLD-DOWN BOLTS.

1121	830506	FID	3	830610	TES	CR	NONE	CHK	NO	BOLT SIZE, FILTER UNIT - 39.

COMMENT: DISCREPANCY BETWEEN HOLD-DOWN BOLT SIZE IN D.A. AND IN FIELD. DCP REVISED ANALYSIS SHOWS BOLTS TO MEET ALLOWABLES AND DESIGN CRITERIA. RESULT OF THIS EOI, 1096 AND 1020, POSSIBLE GENERIC CONCERN, EVEN THOUGH NO OVERSTRESS. RLCA WILL REVIEW DCP BOLT SIZE PROGRAM AND IF DEEMED NECESSARY, A SPECIFIC SAMPLE OF CL. I HOLD-DOWN BOLTS.

1122	830512	OD	0	830512	RLCA	OIR	RLCA	JFH		LARGE BORE PIPE SUPPORT 10/70SL

COMMENT: DESIGN ANALYSIS CALC NO. S-1281 R.3 DOESN'T ADDRESS SUPPORT FREQUENCIES IN UNRESTRAINED DIRECTIONS AS REQUIRED BY LICENSING CRITERIA. SIMPLIFIED IDVP CALCS SHOWS FREQUENCIES LESS THAN 20 HZ. DCP INDICATES ANALYSIS HAS BEEN REVISED (REV 4) AND IT ADDRESSES AND SHOWS ALL FREQ. IN UNRESTRAINED DIRECTION GREATER THAN 20 HZ. IDVP WILL VERIFY CALC

1122	830512	OD	1	830623	RLCA	PER/C	TES	JFH		LARGE BORE PIPE SUPPORT 10/70SL

COMMENT: D.A. FOR SUPPORT 10/70SL (CALC S-1281, R. 3) DOESN'T ADDRESS SUPPORT FREQUENCY IN UNRESTRAINED DIRECTION AS REQUIRED BY DCP PROCEDURES. REALISTIC CALCS SHOW FREQ TO BE ABOVE 20 HZ ALLOWABLE. IDVP DOESN'T CONSIDER THIS EOI TO BE A GENERIC CONCERN.

1122	830512	OD	2	830726	RLCA	PER/C	TES	JFH		LARGE BORE PIPE SUPPORT 10/70SL

COMMENT: D.A. FOR SUPPORT (CALC S-1281, R. 3) DOESN'T ADDRESS FREQ OR STRESS IN UNRESTRAINED DIRECTIONS PER DCP PROCEDURES; DCP CRITERIA REQUIRES EITHER FREQ EXCEED 20 HZ OR STRESS DUE TO LOADING MEET ALLOWABLES. DCP PERFORMED FEM TO SHOW ALL STRESSES BELOW ALLOWABLE. IDVP FEELS EOI NOT A GENERIC CONCERN.

1122	830512	OD	3	830729	TES	PER/DEV	PG&E	JFH		LARGE BORE PIPE SUPPORT 10/70SL

COMMENT: D.A. FOR SUPPORT (CALC S-1281, R. 3) DOESN'T ADDRESS FREQ OR STRESS IN UNRESTRAINED DIRECTIONS PER DCP PROCEDURES. DCP CRITERIA REQUIRES EITHER FREQ EXCEED 20 HZ OR STRESS DUE TO LOADING MEET ALLOWABLES. DCP PERFORMED FEM TO SHOW ALL STRESSES BELOW ALLOWABLE. IDVP FEELS EOI NOT A GENERIC CONCERN.

1122	830512	OD	4	830802	TES	CR	NONE	JFH	NO	LARGE BORE PIPE SUPPORT 10/70SL

COMMENT: D.A. FOR SUPPORT (CALC S-1281, R. 3) DOESN'T ADDRESS FREQ OR STRESS IN UNRESTRAINED DIRECTIONS PER DCP PROCEDURES. DCP CRITERIA REQUIRES EITHER FREQ EXCEED 20 HZ OR STRESS DUE TO LOADING MEET ALLOWABLES. DCP PERFORMED FEM TO SHOW ALL STRESSES BELOW ALLOWABLE. IDVP FEELS EOI NOT A GENERIC CONCERN. DEVIATION.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1122	0		5	0						

COMMENT: SPACE PROVIDED FOR LATER REVISIONS.

1123	830513	OD	0	830513	RLCA	OIR	RLCA	RCW		INSTRUMENTATION TUBING SUPPORT

COMMENT: DESIGN ANALYSIS ITS-5, R. 0 ASSUMES SUPPORT MEMBER TO BE A 1202 SECTION. D.A. ITS-5, R.1 PROVIDES AS-BUILT DATA THAT SHOWS A B 1202 SECTION. SIMPLIFIED D.A. FOR SUPPORT MEMBER INDICATES STRESS ABOVE ALLOWABLE IF CORRECT SECTION PROPERTY (J) IS USED. REPRESENTS SOLE INSTANCE WHERE LICENSING CRITERIA MAY HAVE BEEN EXCEEDED.

1123	830513	OD	1	830623	RLCA	PER/C	TES	RCW		INSTRUMENTATION TUBING SUPPORT

COMMENT: D.A. ITS-5, R. 0 ASSUMES SUPPORT MEMBER TO BE A 1202 SECTION. REVISION 1 PROVIDES AS-BUILT DATA THAT SHOWS SUPPORT MEMBER TO BE A B 1202 SECTION. MORE REALISTIC CALCS SHOW ALL STRESSES TO BE UNDER ALLOWABLES. IDVP DOESN'T CONSIDER THIS EOI TO BE A GENERIC CONCERN.

1123	830513	OD	2	830627	TES	ER/C	PG&E	RCW		INSTRUMENTATION TUBING SUPPORT

COMMENT: DESIGN ANALYSIS ITS-5, R. 0 ASSUMES SUPPORT MEMBER TO BE A-1202 SECTION. R. 1 OF CALC PROVIDES AS-BUILT DATA THAT SHOWS SUPPORT MEMBER TO BE B-1202 SECTION. MORE REALISTIC CALCS SHOW ALL STRESSES TO BE UNDER ALLOWABLES. THIS EOI NOTES A SOLE INSTANCE, IDVP DOESN'T CONSIDER THIS A GENERIC CONCERN.

1123	830513	OD	3	830713	TES	CR	NONE	RCW	NO	INSTRUMENTATION TUBING SUPPORT

COMMENT: DESIGN ANALYSIS ITS-5, R. 0 ASSUMES SUPPORT MEMBER TO BE A-1202 SECTION. R. 1 OF CALC PROVIDES AS-BUILT DATA THAT SHOWS SUPPORT MEMBER TO BE B-1202 SECTION. MORE REALISTIC CALCS SHOW ALL STRESSES TO BE UNDER ALLOWABLES. THIS EOI NOTES A SOLE INSTANCE. IDVP DOESN'T CONSIDER THIS A GENERIC CONCERN. ERROR CLASS C.

1124	830514	OD	0	830514	RLCA	OIR	RLCA	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: D.A. F.E. MODEL C.R. SLAB USED TO GENERATE HOSGRI RESPONSE SPECTRA DOESN'T AGREE WITH FIELD LOCATION OF SUPPORTING WALLS. SPAN LENGTHS OF SLAB MAY SHIFT FREQUENCY AND APPROACH FUNDAMENTAL VERTICAL FREQUENCY AND PROVIDE INCREASED AMPLIFICATION. CLASSIFICATION OF EOI WILL DEPEND ON SUBSEQUENT VERIFICATION.

1124	830514	OD	1	830627	RLCA	PER/B	TES	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB USED TO GENERATE HOSGRI SPECTRA DOESN'T AGREE WITH FIELD VERIFIED LOCATION OF SUPPORTING WALLS. DCP REVISED FEM TO AGREE WITH FIELD. AT CERTAIN FREQUENCIES, SPECTRA INCREASED BY 15%. DCP INDICATES NO STRUCTURAL MODS RESULTED FROM THIS ERROR.

1124	830514	OD	2	830628	TES	ER/B	PG&E	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB USED TO GENERATE HOSGRI SPECTRA DOESN'T AGREE WITH FIELD VERIFIED LOCATION OF SUPPORTING WALLS. DCP REVISED FEM TO AGREE WITH FIELD. AT CERTAIN FREQUENCIES, SPECTRA INCREASED BY 15%. DCP INDICATES NO STRUCTURAL MODS RESULTED FROM THIS ERROR.

1124	830514	OD	3	830721	TES	OIR	RLCA	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB FOR HOSGRI SPECTRA DOESN'T AGREE W/FIELD LOCATION OF SUPPORTING WALLS. DCP HAS REVISED TO AGREE W/FIELD. SPECTRA INCREASES MORE THAN 15% AT SOME FREQ. IDVP DESIGN VERIFIED DCP SPECTRA. DCP INDICATES NO STRUCTURAL MODS RESULT. BASED ON LETTER DCVP-TES-1252, RLCA TO REVIEW AND ISSUE A RESOLUTION.

1124	830514	OD	4	830721	RLCA	PRR/CI	TES	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB FOR HOSGRI SPECTRA DOESN'T AGREE W/FIELD LOCATION OF SUPPORTING WALLS. DCP HAS REVISED TO AGREE W/FIELD. SPECTRA INCREASES MORE THAN 15% AT SOME FREQ. IDVP DESIGN VERIFIED DCP SPECTRA. DCP INDICATES NO STRUCTURAL MODS RESULT.

1124	830514	OD	5	830725	TES	FRR/CI	TES	RDC		AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB FOR HOSGRI SPECTRA DOESN'T AGREE W/FIELD LOCATION OF SUPPORTING WALLS. DCP HAS REVISED TO AGREE W/FIELD. SPECTRA INCREASES MORE THAN 15% AT SOME FREQ. IDVP DESIGN VERIFIED DCP SPECTRA. DCP INDICATES NO STRUCTURAL MODS RESULT.

1124	830514	OD	6	830725	TES	CR	NONE	RDC	NO	AUXILIARY BUILDING SPECTRA GENERATION

COMMENT: DESIGN ANALYSIS FEM OF CR SLAB FOR HOSGRI SPECTRA DOESN'T AGREE W/FIELD LOCATION OF SUPPORTING WALLS. DCP HAS REVISED TO AGREE W/FIELD. SPECTRA INCREASES MORE THAN 15% AT SOME FREQ. IDVP DESIGN VERIFIED DCP SPECTRA. DCP INDICATES NO STRUCTURAL MODS RESULT. PREVIOUSLY AN ERROR CLASS B. CLOSED ITEM.

1125	830520	SID	0	830520	RLCA	OIR	RLCA	CHK		HVAC COMPRESSOR CP-35, 36

COMMENT: CONTROL AND APPLICATION OF HOSGRI SPECTRA WAS IDENTIFIED IN INITIAL SAMPLE AS A GENERIC CONCERN. DCP CAP FORMULATED TO INCLUDE REVIEW FOR CORRECT HOSGRI SPECTRA INPUTS. DESIGN ANALYSIS D-HV-3.1-1, REV. 1 USES INCORRECT AND UNCONSERVATIVE SPECTRA. NO OVERSTRESS.

1125	830520	SID	1	830526	RLCA	PER/C	TES	CHK		HVAC COMPRESSOR CP-35, 36

COMMENT: CALC D-HV-3.1-1 REV. 1 USES INCORRECT AND UNCONSERVATIVE SPECTRA. CONTROL AND APPLICATION OF HOSGRI SPECTRA IB DURING INITIAL SAMPLE WORK AS GENERIC CONCERN. DCP CAP FORMULATED TO INCLUDE REVIEW FOR CORRECT HOSGRI SPECTRA INPUTS. THIS ITEM DOES NOT CAUSE OVERSTRESS.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1127	830525	DHD	3	830616	TES	CR	NONE	CHK	NO	HVAC SUPPLY FANS S-1, 2

COMMENT: DCP FREQUENCY CALC USED ONLY BEARING BLOCK SUPPORT BEAM AND NOT OTHER FLEX OF FAN SUPPORTING STRUCTURE. FN MAY ACTUALLY BE LOWER. DCP FREQ CALC ACCEPTABLE - SIMILIAR TO INITIAL SAMPLE WORK (FAN S-31). DCP BEARING BLOCK SUPPORT BEAM FREQ CALC CORRECT, ORIGINAL RLCA CONCERN NOT VALID. CLOSED ITEM.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1128	830531	FID	0	830531	RLCA	OIR	RLCA	CHK		STATION BATTERY RACKS

COMMENT: D.A. FOR RACKS ASSUMES 1/2" DIAMETER A-307 STRUCTURAL BOLTS. RLCA FIELD VERIFIED BOLTS TO BE 3/8". IF BOLTS THREADED AT SHEAR LOCATIONS SHEAR STRESS EXCEEDS ALLOWABLES BY 63%, IF NOT THREADED, STRESS IS ACCEPTABLE.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1128	830531	FID	1	830620	RLCA	OIR	RLCA	CHK		STATION BATTERY RACKS

COMMENT: D.A. FOR STATION BATTERY RACKS ASSUMES A-307 1/2" STRUCTURAL BOLTS. RLCA FIELD VERIFIED BOLTS TO BE 3/8". D.A. ALSO DOESN'T CONSIDER RESOLVED SHEAR FORCE FOR 3/8" BOLT ANALYSIS. STRESSES EXCEED ALLOWABLE IF CORRECT BOLT SIZE AND SHEAR FORCE IS USED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1128	830531	FID	2	830627	RLCA	PPRR/OIP	TES	CHK		STATION BATTERY RACKS

COMMENT: D.A. FOR STATION BATTERY RACKS ASSUMES A-307 1/2" STRUCTURAL BOLTS. RLCA FIELD VERIFIED BOLTS TO BE 3/8". D.A. ALSO DOESN'T CONSIDER RESOLVED SHEAR FORCE FOR 3/8" BOLT ANALYSIS. STRESSES EXCEED ALLOWABLE IF CORRECT BOLT SIZE AND SHEAR FORCE IS USED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1128	830531	FID	3	830628	TES	PRR/OIP	PG&E	CHK		STATION BATTERY RACKS

COMMENT: D.A. FOR STATION BATTERY RACKS ASSUMES A-307 1/2" STRUCTURAL BOLTS. RLCA FIELD VERIFIED BOLTS TO BE 3/8". D.A. ALSO DOESN'T CONSIDER RESOLVED SHEAR FORCE FOR 3/8" BOLT ANALYSIS. STRESSES EXCEED ALLOWABLE IF CORRECT BOLT SIZE AND SHEAR FORCE IS USED.

1128	830531	FID	4	830809	TES	OIR	RLCA	CHK		STATION BATTERY RACKS

COMMENT: TES REQUESTS THAT RLCA REVIEW THIS FILE ALONG WITH THE DCP'S RESPONSE TO RLCA RFI #972 AND PROVIDE A RECOMMENDATION FOR ITS FUTURE DISPOSITION.

1128	830531	FID	5	830809	RLCA	PER/C	TES	CHK		STATION BATTERY RACKS

COMMENT: DESIGN ANALYSIS FOR STATION BATTERY RACKS (EQPM CALC D-E-3.4-1, R.0) LISTS DIFFERENT STRUCTURAL FRAME BOLTS AND ANCHOR BOLTS THAN THOSE IN THE FIELD. ALSO LOAD DISTRIBUTIONS BTWN MEMBERS ARE UNCONSERVATIVE AND THE RESOLVED SHEAR FORCE FOR FRAME BOLTS WAS NOT CONSIDERED. RLCA HAS PERFORMED ALTERNATE CALCS THAT SHOW ALL STRESSES MEET ALLOWABLES.

1128	0		6	0						

COMMENT: SPACED RESERVED FOR LATER REVISION.

1128	0		7	0						

COMMENT: SPACED RESERVED FOR LATER REVISION.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1129	830603	OD	0	830603	RLCA	OIR	RLCA	JFM		LARGE BORE PIPE SUPPORT 56S/3A

COMMENT: D.A. INCORRECTLY ANALYZED 1/4" WELD BETWEEN PIPE LUG AND SUPPORTING STEEL. WELD STRESS EXCEEDS ALLOWABLE WHEN DIVIDED BY WELD CROSS SECTION. SUPPORT MODIFIED BY DCP. CONFIGURATION QUALIFIED BY CALC NO LONGER EXISTS IN PLANT. NO GENERIC CONCERN.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1129	830603	OD	1	830620	RLCA	PER/C	TES JFH		LARGE BORE PIPE SUPPORT 56S/3A

COMMENT: WELD STRESS CALC USED CONSERVATIVE ASSUMPTION FOR MOMENT OF INERTIA. STRESS MEETS ALLOWABLES IF ACCURATE MEMENT OF INERTIA IS USED AND RESULTANT STRESS IS DIVIDED BY WELD CROSS SECTION. SUPPORT MODIFIED BY DCP. SUPPORT QUALIFIED BY CALC A-103, R5 NO LONGER EXISTS IN PLANT. NOT A GENERIC CONCERN.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1129	830603	OD	2	830627	TES	ER/C	PG&E JFH		LARGE BORE PIPE SUPPORT 56S/3A

COMMENT: D.A. MADE COMPENSATING ERRORS ANALYZING 1/4' WELD BETWEEN PIPE LUG AND SUPPORTING STEEL. WELD STRESSES DO NOT EXCEED ALLOWABLES. NO GNERIC CONCERN. ERROR C.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1129	830603	OD	3	830628	TES	CR	NONE JFH		LARGE BORE PIPE SUPPORT 56S/3A

COMMENT: D.A. MADE COMPENSATING ERRORS ANALYZING 1/4' WELD BETWEEN PIPE LUG AND SUPPORTING STEEL. WELD STRESSES DO NOT EXCEED ALLOWABLES. NO GNERIC CONCERN. ERROR C.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1130	830603	OD	0	830603	RLCA	OIR	RLCA PPR		COMPONENT COOLING WATER LUBE OIL FILTER

COMMENT: D.A. CONCLUDES COOLER NOT QUALIFIED AND MODS ARE REQUIRED. PG&E PH. I FINAL REPORT STATES IT IS AND MODS NOT NEEDED. ITR #8 R. 0 REQUIRES IDVP TO VERIFY DCP CAP HAS BEEN FULLY IMPLEMENTED. THE SIGNIFICANCE OF CONCERN IS THAT REQUIRED CORRECTIVE ACTION WAS NOT IMPLEMENTED. RLCA TO EXPAND REVIEW IN THIS AREA.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1130	830603	OD	1	830618	RLCA	PPRR/DEV	TES PPR		COMPONENT COOLING WATER LUBE OIL FILTER

COMMENT: DCP SCHEDULE AND FINAL REPORT SHOWED WORK ON THIS ITEM TO BE COMPLETE AND QUALIFIED. AFTER 830614 TECHNICAL MEETING, DCP SHOWED THE ITEM INCLUDED ON INTERNAL INTERFACE LISTS OF ITEMS FOR ACTION. IT IS CLEAR THAT REQUIRED ACTION WOULD HAVE BEEN IMPLEMENTED. DCP COMMITTED TO REVISE THIS SECTION OF PH. I FINAL REPORT.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1130	830603	OD	2	830627	TES	PRR/DEV	PG&E PPR		COMPONENT COOLING WATER LUBE OIL FILTER

COMMENT: PG&E PH. I FINAL REPORT INDICATES THIS ITEM QUALIFIED AND NO MODS. DESIGN ANALYSIS CONCLUDES THAT IT IS NOT QUALIFIED DUE TO HIGH NOZZLE LOADS. DCP INTERNAL MEMOS INDICATE ITEM ALREADY BEING TRACKED. PH. I FINAL REPORT IS INCORRECT, PG&E HAS COMMITED TO CORRECT IT.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1130	830603	OD	3	830630	TES	CR	NONE PPR	NO	COMPONENT COOLING WATER LUBE OIL FILTER

COMMENT: D.A. CONCLUDES COOLER NOT QUALIFIED AND MODS ARE REQUIRED. PG&E PH. I FINAL REPORT STATES IT IS AND MODS NOT NEEDED. AFTER 830614 TECHNICAL MEETING, DCP SHOWED THE ITEM INCLUDED ON INTERNAL INTERFACE LISTS OF ITEMS FOR ACTION. IT IS CLEAR THAT REQUIRED ACTION WOULD HAVE BEEN IMPLEMENTED. DCP COMMITTED TO REVISE THIS SECTION OF PH. I FINAL REPORT. DE

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1131	830606	OD	0	830606	RLCA	OIR	RLCA JFH		LARGE BORE PIPE SUPPORTS 58S/16V AND 63/26V

COMMENT: D.A. DO NOT EVALUATE SHEAR LUGS AND ATTACHMENT WELDS. EVALUATION REQUIRED FOR CAP. IDVP WILL REVIEW REVISED DCP CALCS AND EVALUATE THE LUGS AND WELDS BASED ON ORIGINAL LOADS.

	REV. 0			LATEST REV.			ACTION	PG&E	
FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG TES	MODS	SUBJECT
1131	830606	OD	1	830620	RLCA	PPRR/DEV	TES JFH		LARGE BORE PIPE SUPPORTS 58S/16V AND 63/26V

COMMENT: DESIGN ANALYSES DON'T EVALUATE SHEAR LUGS AND ATTACHMENT WELDS [CALCS H-1040 R.2 AND H-359 R.4]. THIS IS REQUIRED BY DCP PROCEDURES. DEPARTURE FROM PROCEDURE, NOT ERROR. STRESSES ARE LOW BY INSPECTION.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1131	830606	OD	2	830624	TES	PRR/DEV	PG&E	JFM		LARGE BORE PIPE SUPPORTS 58S/16V AND 63/26V

COMMENT: D.A. FOR THESE SUPPORTS AND ASSOCIATED PIPING DON'T EVALUATE SHEAR LUGS AND ATTACHMENT WELDS. THIS EVALUATION REQUIRED BY DCP PROCEDURES. DEPARTURE FROM PROCEDURE, NOT AN ERROR. STRESSES IN THESE SHEAR LUGS AND ATTACHMENT WELDS ARE LOW BY INSPECTION.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1131	830606	OD	3	830624	TES	CR	NONE	JFM		LARGE BORE PIPE SUPPORTS 58S/16V AND 63/26V

COMMENT: D.A. FOR THESE SUPPORTS AND ASSOCIATED PIPING DON'T EVALUATE SHEAR LUGS AND ATTACHMENT WELDS. THIS EVALUATION REQUIRED BY DCP PROCEDURES. DEPARTURE FROM PROCEDURE, NOT AN ERROR. STRESSES IN THESE SHEAR LUGS AND ATTACHMENT WELDS ARE LOW BY INSPECTION. DEVIATION.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1132	830606	OD	0	830606	RLCA	OIR	RLCA	RDC		AUXILIARY BUILDING

COMMENT: DCP REPORTED COMPLETION OF AUX BUILDING MEMBER EVALUATIONS. DOES NOT INCLUDE EVALUATION OF SLABS FOR IN-PLANE LOADING. REQUIRED CORRECTIVE ACTION WAS NOT FULLY IMPLEMENTED, YET REPORTED AS COMPLETE. RLCA WILL CONTINUE REVIEW IN CIVIL/STRUCTURAL AREA.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1132	830606	OD	1	830618	RLCA	PRR/CI	TES	RDC		AUXILIARY BUILDING

COMMENT: THIS EOI CONTAINS AN INCORRECT STATEMENT. IT SHOULD READ '...THIS MODEL WAS REQUIRED TO MORE ACCURATELY DISTRIBUTE THE LOADS FROM THE ORIGINAL STICK MODEL...' RLCA RECOMMENDS COMBINING THIS EOI WITH EOI 1097 AS AN ERROR CLASS A OR B.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1132	830606	OD	2	830625	TES	PRR/CI	TES	RDC		AUXILIARY BUILDING

COMMENT: THIS EOI CONTAINS AN INCORRECT STATEMENT. IT SHOULD READ '...THIS MODEL WAS REQUIRED TO MORE ACCURATELY DISTRIBUTE THE LOADS FROM THE ORIGINAL STICK MODEL...' RLCA RECOMMENDS COMBINING THIS EOI WITH EOI 1097 AS AN ERROR CLASS A OR B.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1132	830606	OD	3	830627	TES	CR	NONE	RDC		AUXILIARY BUILDING

COMMENT: DCP REPORTED COMPLETION OF AUX BUILDING MEMBER EVALUATIONS. DOES NOT INCLUDE EVALUATION OF SLABS FOR IN-PLANE LOADING. THIS EOI CONTAINS AN INCORRECT STATEMENT. IT SHOULD READ '...THIS MODEL WAS REQUIRED TO MORE ACCURATELY DISTRIBUTE THE LOADS FROM THE ORIGINAL STICK MODEL...' RLCA RECOMMENDS COMBINING THIS EOI WITH 1097 AS AN ER/AB. CLOSED ITEM.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1133	830613	OD	0	830613	RLCA	OIR	RLCA	RDF		LARGE BORE PIPING - ANALYSIS 8-117 REV. 2

COMMENT: VALVE 9003A IN D.A. 8-117, REV. 2 WAS MODELLED WITH 2/3 WEIGHT AT OVERALL VALVE C. OF G. SECT 4.5.6.2 OF DCP PROCEDURE P-11 REV. 3 REQUIRES TOTAL VALVE WEIGHT TO BE MODELLED THERE. RLCA TO EXAMINE REV. 3 TO CONFIRM STRESS IMPACT AND CONTINUE REVIEW OF VALVE MODELLING.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
1133	830613	OD	1	830629	RLCA	PER/C	TES	RDF		LARGE BORE PIPING - ANALYSIS 8-117 REV. 2

COMMENT: VALVE 9003A IN D.A. 8-117, R.2 WAS MODELLED WITH 2/3 WEIGHT AT C OF G. DCP PROCEDURE REQUIRES TOTAL WEIGHT BE MODELLED THERE. RLCA HAS VERIFIED THAT REVISED DCP ANALYSIS CORRECTLY MODELS VALVE AND ACCELERATIONS MEET ALLOWABLES. EOI 1133 HAS BEEN COMBINED INTO THIS FILE.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1133	830613	OD	2	830706	TES	ER/C	PG&E	RDF		LARGE BORE PIPING - ANALYSIS 8-1...

COMMENT: D.A. 8-117, R. 2 MODELLED 2/3 OF VALVE WEIGHT OF C. OF G. DCP PROCEDURES REQUIRES TOTAL VALVE WEIGHT. EOI 1106 HAS BEEN COMBINED WITH THIS FILE. DCP HAS REVISED ANALYSIS. RLCA HAS VERIFIED REVISED ANALYSIS CORRECTLY MODELS VALVE 9003A AND SHOWS ACCELERATIONS TO MEET ALLOWABLES.

FILE NO.	DATE	BASIS	REV.	DATE	BY	STATUS	ORG	TES	MODS	SUBJECT
1133	830613	OD	3	830706	TES	CR	NONE	RDF	NO	LARGE BORE PIPING - ANALYSIS 8-117 REV. 2

COMMENT: D.A. 8-117, R. 2 MODELLED 2/3 OF VALVE WEIGHT OF C. OF G. DCP PROCEDURES REQUIRES TOTAL VALVE WEIGHT. EOI 1106 HAS BEEN COMBINED WITH THIS FILE. DCP HAS REVISED ANALYSIS. RLCA HAS VERIFIED REVISED ANALYSIS CORRECTLY MODELS VALVE 9003A AND SHOWS ACCELERATIONS TO MEET ALLOWABLES. ERROR CLASS C.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1134	830615	OD	0	830615	RLCA	OIR	RLCA	RCW		HVAC DUCT AND DUCT SUPPORTS

COMMENT: RLCA HAS REVIEWED 3 D.A. THAT USED STRUDL-II . IN 2 OF THE 3, LOADING RESULTED IN MODAL FREQUENCY NOT CORRESPONDING TO FIRST MODE. ONE DIRECTIONAL LOADING USED WITH RAYLEIGH-RITZ METHOD MAY NOT ACCURATELY ESTABLISH FIRST MODE FREQUENCY. POSSIBLE GENERIC CONCERN.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	MODS	SUBJECT
1135	830616	OD	0	830616	RLCA	OIR	RLCA	RDF		LARGE BORE PIPING ANALYSIS 2-120

COMMENT: VALVES LCV-113 AND 115 IN D. A. 2-120 REV. 0 WERE MODELLED WITH VALVE BODY WEIGHT OF 69 LBS AND OPERATOR WEIGHT OF 119 LBS. RLCA REVIEW SHOWED WEIGHTS TO BE APPROXIMATELY 125 LBS AND 130 LBS RESPECTIVELY.

1135	830616	OD	1	830629	RLCA	PER/C	TES	RDF		LARGE BORE PIPING ANALYSIS 2-120

COMMENT: D.A 2-120. R.0 MODELLED VALVE BODY WEIGHT OF 69 LBS AND OPERATOR WEIGHT OF 119 LBS FOR VALVES LCV-113 AND 115. RLCA REVIEW SHOWED WEIGHTS TO BE 125 AND 130 LBS, RESPECTIVELY. RLCA HAS VERIFIED REVISED DCP ANALYSIS CORRECTLY MODELS VALVES AND SHOWS ACCELERATIONS MEET ALLOWABLES. EOI 1106 COMBINED INTO THIS FILE.

1135	830616	OD	2	830706	TES	ER/C	PG&E	RDF		LARGE BORE PIPING ANALYSIS 2-120

COMMENT: D.A 2-120. R.0 MODELLED VALVE BODY WEIGHT OF 69 LBS AND OPERATOR WEIGHT OF 119 LBS FOR VALVES LCV-113 AND 115. RLCA REVIEW SHOWED WEIGHTS TO BE 125 AND 130 LBS, RESPECTIVELY. RLCA HAS VERIFIED REVISED DCP ANALYSIS CORRECTLY MODELS VALVES AND SHOWS ACCELERATIONS MEET ALLOWABLES. EOI 1106 COMBINED INTO THIS FILE.

1135	830616	OD	3	830706	TES	CR	NONE	RDF	NO	LARGE BORE PIPING ANALYSIS 2-120

COMMENT: D.A 2-120. R.0 MODELLED VALVE BODY WEIGHT OF 69 LBS AND OPERATOR WEIGHT OF 119 LBS FOR VALVES LCV-113 AND 115. RLCA REVIEW SHOWED WEIGHTS TO BE 125 AND 130 LBS, RESPECTIVELY. RLCA HAS VERIFIED REVISED DCP ANALYSIS CORRECTLY MODELS VALVES AND SHOWS ACCELERATIONS MEET ALLOWABLES. EOI 1106 COMBINED INTO THIS FILE. ERROR CLASS C.

1136	830616	DHD	0	830616	RLCA	OIR	RLCA	PPR		COMPONENT COOLING WATER SURGE TANK

COMMENT: ALLOWABLE CALCULATED IN ANALYSIS IS LARGER THAN ALLOWABLE DEFINED BY CODE. TANK INTERNAL PRESSURE EXCLUDED FROM EVALUATION OF TANK SHELL STRESS AT NOZZLES. BOLT STRESSES WITHIN CORRECT ALLOWABLE. TANK SHELL STRESS EXCEED ALLOWABLE IN FORMAL SENSE. IDVP FAULTED CONDITION EVALUATION SHOWED STRESSES WITHIN ALLOWABLES.

1136	830616	DHD	1	830630	RLCA	PER/C	TES	PPR		COMPONENT COOLING WATER SURGE TANK

COMMENT: ALLOWABLE CALCULATED IN ANALYSIS LARGER THAN CODE ALLOWABLE BUT STRESSES WITHIN CRITERIA WHEN CORRECTLY CALCULATED SHEAR STRESS IS USED. TANK INTERNAL PRESSURE EXCLUDED FROM EVALUATION OF SHELL STRESS AT NOZZLES. TANK ACTUALLY VENTED TO ATMOSPHERE AND INTERNAL PRESSURE IS NEGLIGIBLE.

1136	830616	DHD	2	830707	TES	ER/C	PG&E	PPR		COMPONENT COOLING WATER SURGE TANK

COMMENT: INCORRECT BOLT ALLOWABLE STRESS USED IN ANALYSIS. CALCULATED STRESSES DON'T EXCEED CORRECT CRITERION. ORIGINAL EOI ERRED W/RESPECT TO INCLUSION OF DESIGN PRESSURE CALC OF SHELL STRESSES NEXT TO NOZZLE, ONLY 3 PSI OPERATING PRESSURE IS REQUIRED (NEGLIGIBLE).

1136	830616	DHD	3	830707	TES	CR	NONE	PPR	NO	COMPONENT COOLING WATER SURGE TANK

COMMENT: INCORRECT BOLT ALLOWABLE STRESS USED IN ANALYSIS. CALCULATED STRESSES DON'T EXCEED CORRECT CRITERION. ORIGINAL EOI ERRED W/RESPECT TO INCLUSION OF DESIGN PRESSURE CALC OF SHELL STRESSES NEXT TO NOZZLE, ONLY 3 PSI OPERATING PRESSURE IS REQUIRED (NEGLIGIBLE). ERROR CLASS C.

1137	830621	DHD	0	830621	RLCA	OIR	RLCA	RDF		LARGE BORE PIPING - ANALYSIS 4-101

COMMENT: VALVE FCV-365 IN REV. 1 OF THE ANALYSIS WAS MODELLED WITH A WEIGHT OF 405 LBS. RLCA REVIEW SHOWED WEIGHT TO BE APPROX. 502 LBS. COMBINES WITH 1133 AND 1135 AS A GENERIC CONCERN WITH VALVE MODELLING IN CAP.

1137	830621	DHD	1	830629	RLCA	PER/C	TES	RDF		LARGE BORE PIPING - ANALYSIS 4-101

COMMENT: VALVE FCV-365 MODELLED WITH WEIGHT OF 405 LBS. RLCA REVIEW SHOWED WEIGHT OF 502 LBS. GENERIC CONCERN WITH VALVE MODELLING IN CAP. DCP REVISED ANALYSIS TO INCLUDE CORRECT WEIGHT, LICENSING CRITERIA MEET. DCP COMMITTED TO FINAL PIPING REVIEW TO ASSURE CORRECT VALVE MODELLING. GENERIC CONCERN COMBINED WITH EOI 1098 AS ER/AR.

1137	830621	DHD	2	830706	TES	ER/C	PG&E	RDF		LARGE BORE PIPING - ANALYSIS 4-101

COMMENT: VALVE FCV-365 MODELLED WITH WEIGHT OF 405 LBS. RLCA REVIEW SHOWED WEIGHT OF 502 LBS. GENERIC CONCERN WITH VALVE MODELLING IN CAP. DCP REVISED ANALYSIS TO INCLUDE CORRECT WEIGHT, LICENSING CRITERIA MEET. DCP COMMITTED TO FINAL PIPING REVIEW TO ASSURE CORRECT VALVE MODELLING. GENERIC CONCERN COMBINED WITH EOI 1098 AS ER/AB.

1137	830621	DHD	3	830706	TES	CR	NONE	RDF	NO	LARGE BORE PIPING - ANALYSIS 4-101

COMMENT: VALVE FCV-365 MODELLED WITH WEIGHT OF 405 LBS. RLCA REVIEW SHOWED WEIGHT OF 502 LBS. GENERIC CONCERN WITH VALVE MODELLING IN CAP. DCP REVISED ANALYSIS TO INCLUDE CORRECT WEIGHT, LICENSING CRITERIA MEET. DCP COMMITTED TO FINAL PIPING REVIEW TO ASSURE CORRECT VALVE MODELLING. GENERIC CONCERN COMBINED W/EOI 1098 AS ER/AB. ER/C.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1138	830725	OD	0	830725	RLCA	OIR	RLCA	RDF		LARGE BORE PIPING 9-108, REV. 0

COMMENT: D.A. APPLIED SIF OF 1.0 AT PIPE/REGENERATIVE HX INTERFACE. RLCA DETERMINED SIF OF 1.9 REQUIRED. PIPE STRESSES EXCEED ALLOWABLE IF CORRECT SIF USED. D.A. RERUN WITH USING ACTUAL SPECTRA, STRESSES MEET ALLOWABLES. DCP COMMITTED TO REVIEW ALL L.B. DESIGN CLASS I ANALYSES FOR SIF.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1139	830726	OD	0	830726	RLCA	OIR	RLCA	RCW		SMALL BORE SUPPORT 2159/2

COMMENT: D.A. FREQUENCY CALC. IN RESTRAINED DIRECTION PERFORMED BY COMPARING COMPUTED SUPPORT DEFLECTION TO CONSERVATIVE STANDARD DEFLECTION. CALC ERRONEOUSLY COMPARED; RESULTS IN FREQ LESS THAN 20 HZ. REVISED ANALYSIS HAS BEEN REPORTED TO SHOW CRITERIA HAS BEEN MET.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1139	830726	OD	1	830803	RLCA	PER/C	TES	RCW		SMALL BORE SUPPORT 2159/2

COMMENT: D.A. FREQUENCY CALC IN RESTRAINED DIRECTION BASED ON COMPUTING SUPPORT DEFLECTION AND COMPARING TO CONSERVATIVE STANDARD. DEFLECTION ERRONEOUSLY COMPARED RESULTING IN FREQ. LESS THAN 20 HZ. DCP REVISED ANALYSIS AND RLCA VERIFIED THAT FREQ. EXCEEDS 20 HZ. AS-BUILT SUPPORT MEET LICENSING CRITERIA.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1139	830726	OD	2	830809	TES	ER/C	PG&E	RCW		SMALL BORE SUPPORT 2159/2

COMMENT: D.A. FREQUENCY CALC IN RESTRAINED DIRECTION BASED ON COMPUTING SUPPORT DEFLECTION AND COMPARING TO CONSERVATIVE STANDARD. DEFLECTION ERRONEOUSLY COMPARED RESULTING IN FREQ. LESS THAN 20 HZ. DCP REVISED ANALYSIS AND RLCA VERIFIED THAT FREQ. EXCEEDS 20 HZ. AS-BUILT SUPPORT MEET LICENSING CRITERIA.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1139	830726	OD	3	830809	TES	CR	NONE	RCW	NO	SMALL BORE SUPPORT 2159/2

COMMENT: D.A. FREQUENCY CALC IN RESTRAINED DIRECTION BASED ON COMPUTING SUPPORT DEFLECTION AND COMPARING TO CONSERVATIVE STANDARD. DEFLECTION ERRONEOUSLY COMPARED RESULTING IN FREQ. LESS THAN 20 HZ. DCP REVISED ANALYSIS AND RLCA VERIFIED THAT FREQ. EXCEEDS 20 HZ. AS-BUILT SUPPORT MEET LICENSING CRITERIA. ERROR CLASS C.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1140	830729	OD	0	830729	RLCA	OIR	RLCA	JCT		FIRE PUMP - CAP ANALYSIS SQE-7.1, REV. 0

COMMENT: DCP ANALYSIS DOESN'T EXAMINE DISCHARGE NOZZLE FLANGED JOINT. IDVP REVIEW SHOWS COMBINATION OF SEISMIC PIPING NOZZLE LOADS AND DESIGN PRESSURE CAUSE FLANGE BOLT STRESS TO EXCEED ALLOWABLE CRITERIA (ASME SECT. III, CL. III W/HOSGRI CRITERIA).

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1140	830729	OD	1	830812	RLCA	OIR	RLCA	JCT		FIRE PUMP - CAP ANALYSIS SQE-7.1, REV. 0

COMMENT: DCP ANALYSIS DOESN'T EXAMINE DISCHARGE NOZZLE FLANGED JOINT. IDVP REVIEW SHOWS COMBINATION OF SEISMIC PIPING NOZZLE LOADS AND DESIGN PRESSURE CAUSE FLANGE BOLT STRESS TO EXCEED ALLOWABLE CRITERIA (ASME SECT. III, CL. III W/HOSGRI CRIT.) APPLICATION OF APPROP. CODE AND CALCS SHOW ALL STRESSES BELOW ALLOWABLE. AS-BUILT DOESN'T MEET PG&E PIPING SPECIFICATION

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1140	830729	OD	2	830812	RLCA	PER/C	TES	JCT		FIRE PUMP - CAP ANALYSIS SQE-7.1, REV. 0

COMMENT: DCP ANALYSIS DOESN'T EXAMINE DISCHARGE NOZZLE FLANGED JOINT. IDVP REVIEW SHOWS COMBINATION OF SEISMIC PIPING NOZZLE LOADS AND DESIGN PRESSURE CAUSE FLANGE BOLT STRESS TO EXCEED ALLOWABLE CRITERIA (ASME SECT. III, CL. III W/HOSGRI CRIT.) APPLICATION OF APPROP. CODE AND CALCS SHOW ALL STRESSES BELOW ALLOWABLE. AS-BUILT DOESN'T MEET PG&E PIPING SPECIFICATION

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1140	830729	OD	3	830812	TES	ER/C	PG&E	JCT		FIRE PUMP - CAP ANALYSIS SQE-7.1, REV. 0

COMMENT: DCP ANALYSIS DOESN'T EXAMINE DISCHARGE NOZZLE FLANGED JOINT. IDVP REVIEW SHOWS COMBINATION OF SEISMIC PIPING NOZZLE LOADS AND DESIGN PRESSURE CAUSE FLANGE BOLT STRESS TO EXCEED ALLOWABLE CRITERIA (ASME SECT. III, CL. III W/HOSGRI CRIT.) APPLICATION OF APPROP. CODE AND CALCS SHOW ALL STRESSES BELOW ALLOWABLE. AS-BUILT DOESN'T MEET PG&E PIPING SPECIFICATION

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1141	830802	OD	0	830802	RLCA	OIR	RLCA	RDF		SMALL AND LARGE BORE PIPING

COMMENT: DCP PROCEDURE P-11, R.4 DOESN'T INCLUDE LINES 26 AND 1040 THRU 1043 HIGH ENERGY LINES FOR POSTULATED BREAK LOCATION REVIEW. SINCE P-11 DIDN'T IDENTIFY LINES AS H.E., POSTULATED BREAK LOCATIONS MAY NOT HAVE BEEN IDENTIFIED.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	ACTION STATUS	PG&E ORG	TES	MODS	SUBJECT
1142	830809	OD	0	830809	RLCA	OIR	RLCA	RCW		SMALL BORE SUPPORT S1-8R LINE 3900

COMMENT: ANCHOR S1-8R ON LINE 3900 NOT CONSIDERED BY D.A. FOR EFFECTS OF VARIOUS LOADIING CONDITIONS ON OTHER DESIGN CLASS I SUPPORTS. SUPPORT LOCATED ON NON-CL. I PIPING. CONSIDERATION OF VARIOUS LOADING CONDITIONS REQUIRED BY DCN M-9. TECHNICA CONCERN HAS APPARENTLY BEEN ELIMINATED SINCE ANCHOR HAS BEEN REPLACED WITH A GRAVITY SUPPORT.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7001	821011	QAR	0	821011	RFR	OIR	RFR	MAR		AUX AND FH BUILDING HVAC SYSTEM

COMMENT: AS FAR AS COULD BE DETERMINED, THERE IS NO EVIDENCE OF AN INDEPENDENT REVIEW OF AUX AND FH BUILDING HVAC PRESSURE LOSS CALC PERFORMED BY GEZ. THIS ITEM IS OUTSIDE CURRENT SWEC SAMPLE FOR IDVP PHASE 2.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7001	821011	QAR	1	830202	TES	PRR/CI	TES	MAR		AUX AND FH BUILDING HVAC SYSTEM

COMMENT: BASED UPON ADDITIONAL INFORMATION PROVIDED BY PG&E (DCVP-TES-647) ON 821215 AND REVIEWED BY SWEC, THE CONCERN ADDRESSED BY THIS FILE HAS BEEN RESOLVED. FILE TO BE CLOSED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7001	821011	QAR	2	830202	TES	CR	NONE	MAR	NO	AUX AND FH BUILDING HVAC SYSTEM

COMMENT: AS FAR AS COULD BE DETERMINED, THERE IS NO EVIDENCE OF AN INDEPENDENT REVIEW OF AUX. AND FH BLDG HVAC PRESSURE LOSS CALC PERFORMED BY GEZ. THIS ITEM IS OUTSIDE CURRENT SWEC SAMPLE FOR IDVP PH. II. BASED UPON ADD. INFO PROVIDED BY PG&E (DCVP-TES-647) ON 821215 & REVIEWED BY SWEC, THE CONCERN ADDRESSED BY THIS FILE HAS BEEN SATISFACTORILY RESOLVED. FILE CLOSED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	0	821011	RFR	OIR	RFR	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: NO OBJECTIVE EVIDENCE FOUND THAT THE EFFECTS OF JET IMPINGEMENT ON COMPONENTS INSIDE CONT. WERE CONSIDERED. FSAR, SECT. 3.6 STATES THAT THIS WAS ACCOMPLISHED. PG&E COULD NOT PROVIDE EVIDENCE OF ANALYSIS. JET IMPINGEMENT INSIDE CONT. MAY NOT BE IN CURRENT IDVP SCOPE. ADDITIONAL VERIFICATION REQUIRED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	1	821011	RFR	PPRR/OIP	TES	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: PG&E TO PROVIDE SWEC W/OBJECTIVE EVIDENCE AND/OR RESPONSE RELATIVE TO ANALYSES FOR EFFECTS OF JET IMPINGEMENT ON COMPONENTS INSIDE CONTAINMENT PER PARA.3.6 OF FSAR.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	2	821022	TES	PRR/OIP	PG&E	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: PG&E TO PROVIDE CALCULATIONS AND OTHER SUPPORTING DOCUMENTATION OF JET IMPINGEMENT ANALYSIS PERFORMED INSIDE CONTAINMENT AS STIPULATED IN FSAR SECT. 3.6, PARAGRAPH 3.6, ADDITIONAL VERIFICATION REQUIRED.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	3	830204	TES	OIR	TES	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: JET IMPINGEMENT INSIDE CONTAINMENT IS BEING ANALYZED BY DCP AND WILL BE SUBJECT TO IDVP VERIFICATION AS PART OF ADDITIONAL VERIFICATION PROGRAM. THIS FILE WILL BE RECLASSIFIED AS A CLASS A/B ERROR SO THAT IT CAN BE ADDRESSED AS PART OF THE ADDITIONAL VERIFICATION EFFORT.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	4	830204	TES	ER/AB	PG&E	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: RFR AUDIT OF PG&E SHOWED NO DOCUMENTED EVIDENCE RE. JET IMPINGEMENT INSIDE CONTAINMENT. FSAR SECT. 3.6 PAR. 3.6 STATES THIS WAS DONE. NECESSARY ANALYSIS BEING DONE BY DCP WILL BE REVIEWED BY IDVP. FILE EFFORTS DESCRIBED IN ITR-34.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	5	830726	TES	OIR	SWEC	MAR		CONTAINMENT JET IMPINGEMENT

COMMENT: SWEC TO REVIEW DCP COMPLETION SHEET, SIGNED 830720, AND PROVIDE A RECOMMENDATION FOR FUTURE DISPOSITION.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7002	821011	QAR	6	830802	TES	CR	NONE	MAR	NO	CONTAINMENT JET IMPINGEMENT

COMMENT: JET IMPINGEMENT INSIDE CONTAINMENT ANALYZED BY DCP AND VERIFIED BY IDVP AS PART OF ADDITIONAL VERIFICATION PROGRAM. ISSUANCE OF ITR-48 REPORTS SUCCESSFUL COMPLETION OF "ADDITIONAL SAMPLE" COVERING JET IMPINGEMENT EFFORTS OF POSTULATED PIPE RUPTURES INSIDE CONTAINMENT DEFINED BY ITR-34, SECTION 6. PREVIOUSLY AN ER/AB. CLOSED ITEM.

FILE NO.	REV. 0 DATE	BASIS	REV.	LATEST REV. DATE	BY	STATUS	ACTION ORG	PG&E TES	NODS	SUBJECT
7003	821123	QAR	0	821123	RFR	OIR	RFR	MAR		DESIGN REVIEW OF CONTAINMENT ISOLATION

COMMENT: JUSTIFICATION THAT EDS CONCURS WITH THE PG&E RESOLUTION OF THE OPEN ITEMS ON THE EDS DESIGN REVIEW OF THE CONTAINMENT ISOLATION SYSTEM WAS NOT AVAILABLE.

FILE NO.	REV. 0 DATE	BASIS	LATEST REV. REV.	DATE	BY	STATUS	ACTION ORG	TES	PG&E MODS	SUBJECT
8064	830215	DHD	5	830407	TES	PRR/DEV	PG&E	RRB		AFW SYS COMPONENTS POH 110, 111, 113, & 115
COMMENT:	PG&E RES. AND COMP. SHT. DATED 830322. DESIGN DOCUMENTS IMPROPERLY REPORTED CLASSIFICATION OF POH'S AS S-R. PG&E TO REVISE ENVIRONMENTAL QUALIFICATION FILES AND INSTRUMENT SCHEMATIC 102036 TO REFLECT CL. II STATUS.									
8064	830215	DHD	6	830407	TES	CR	NONE	RRB	NO	AFW SYS COMPONENTS POH 110, 111, 113, & 115
COMMENT:	NO DOCUMENTATION THAT POH'S LISTED ARE ENVIRONMENTALLY QUALIFIED. PG&E RES. AND COMP. SHT. DATED 830322. DESIGN DOCUMENTS IMPROPERLY REPORTED CLASSIFICATION OF POH'S AS S-R. PG&E TO REVISE ENVIRONMENTAL QUALIFICATION FILES AND INSTRUMENT SCHEMATIC 102036 TO REFLECT CL. II STATUS. DEVIATION.									
8065	830608	FID	0	830608	SWEC	OIR	SWEC	LCN		JET IMPINGEMENT REVIEW
COMMENT:	POSTULATED BREAK ON FEEDWATER LINE NO. 555 MAY IMPINGE UPON HORIZONTAL PORTION OF MAIN STEAM LINE NO. 227. CONDUIT KX-582 MISIDENTIFIED AND MAY BE WITHIN ZONE OF INFLUENCE OF RCP OUTLET. LINE 24 MAY IMPINGE UPON CONDUIT KX-428. RUPTURE OF LETDOWN LINE 24 MAY IMPINGE UPON TWO OF THE VERTICAL SUPPORTS FOR EXCESS LETDOWN LINE 24.									
8065	830608	FID	1	830608	SWEC	PPRR/OIP	TES	LCN		JET IMPINGEMENT REVIEW
COMMENT:	SAFETY EVALUATION SHOULD BE PERFORMED BY THE DCP TO DETERMINE WHETHER IDENTIFIED TARGETS ARE NEEDED TO SAFELY SHUTDOWN THE PLANT UNDER THE CONDITIONS ASSOCIATED WITH THE POSTULATED PIPE BREAKS OR RUPTURES.									
8065	830608	FID	2	830616	TES	PRR/OIP	PG&E	LCN		JET IMPINGEMENT REVIEW
COMMENT:	FOUR ITEMS OF CONCERN HAVE BEEN IDENTIFIED RESULTING FROM DATA OBTAINED DURING THE IDVP 830524-26 SITE VERIFICATION. DCP TO PERFORM A SAFETY EVALUATION TO RESOLVE THE ITEMS.									
8065	830608	FID	3	830621	TES	OIR	SWEC	LCN		JET IMPINGEMENT REVIEW
COMMENT:	SWEC TO REVIEW THE DCP COMPLETION SHEET SIGNED 830617 AND PROVIDE A RECOMMENDATION FOR FUTURE DISPOSITION.									
8065	830608	FID	4	830715	SWEC	PPRR/CI	TES	LCN		JET IMPINGEMENT REVIEW
COMMENT:	DCP EVALUATED FOUR JET IMPINGEMENT INTERACTION W/S-R TARGETS. ALL FOUR INTERACTIONS ARE CONCLUDED TO IMPAIR NO ESSENTIAL FUNCTIONS REQUIRED TO MITIGATE CONSEQUENCES OF POSTULATED HELB'S AND TO SAFELY SHUTDOWN PLANT. FOUR DISCREPANCIES ARE CONSIDERED ISOLATED INSTANCES AND NOT INDICATIVE OF ANY GENERIC DIFFICIENCY IN DCP JET IMPINGEMENT FIELD REVIEW.									
8065	830608	FID	5	830720	TES	PRR/CI	TES	LCN		JET IMPINGEMENT REVIEW
COMMENT:	DCP EVALUATED FOUR JET IMPINGEMENT INTERACTION W/S-R TARGETS. ALL FOUR INTERACTIONS ARE CONCLUDED TO IMPAIR NO ESSENTIAL FUNCTIONS REQUIRED TO MITIGATE CONSEQUENCES OF POSTULATED HELB'S AND TO SAFELY SHUTDOWN PLANT. FOUR DISCREPANCIES ARE CONSIDERED ISOLATED INSTANCES AND NOT INDICATIVE OF ANY GENERIC DIFFICIENCY IN DCP JET IMPINGEMENT FIELD REVIEW.									
8065	830608	FID	6	830720	TES	CR	NONE	LCN	NO	JET IMPINGEMENT REVIEW
COMMENT:	DCP EVALUATED FOUR JET IMPINGEMENT INTERACTION W/S-R TARGETS. ALL FOUR INTERACTIONS ARE CONCLUDED TO IMPAIR NO ESSENTIAL FUNCTIONS REQUIRED TO MITIGATE CONSEQUENCES OF POSTULATED HELB'S AND TO SAFELY SHUTDOWN PLANT. FOUR DISCREPANCIES ARE CONSIDERED ISOLATED INSTANCES AND NOT INDICATIVE OF ANY GENERIC DIFFICIENCY IN DCP JET IMPINGMENT FIELD REVIEW. CI.									

E.1 ITRs In Numerical Sequence

ITR	REV NO.	ISSUE DATE	ISSUED BY	TITLE
1	1	821022	RLCA	Additional Verification and Additional Sampling (Phase 1)
2	0	820623	TES	Comments on the R.F. Reedy, Inc., Quality Assurance Audit Report on Safety-Related Activities Performed by PGandE Prior to June 1978
3	0	820716	RLCA	Tanks
4	0	820723	RLCA	Shake Table Testing
5	0	820819	RLCA	Design Chain
6	0	820910	RLCA	Auxiliary Building
7	0	820917	RLCA	Electrical Raceway Supports
8	0	821005	RLCA	Independent Design Verification Program for PGandE Corrective Action
9	0	821015	RFR	Development of the Service-Related Contractor List for Non-Seismic Design Work Performed for DCNPP-1 Prior to June 1, 1978
10	0	821029	RLCA	Verification of Design Analysis Hosgri Spectra
11	0	821102	TES	PGandE-Westinghouse Seismic Interface Review
12	0	821105	RLCA	Piping
13	0	821105	RLCA	Soils - Intake Structure
14	2	830725	SWEC	Verification of the Pressure, Temperature, Humidity, and Submergence Environments used for Safety-Related Equipment Specifications Outside Containment for Auxiliary Feedwater System and CRVP System

E.1 ITRs In Numerical Sequence (Continued)

ITR	REV NO.	ISSUE DATE	ISSUED BY	TITLE
15	0	821210	RLCA	HVAC Duct and Supports Report
16	0	821208	RLCA	Soils - Outdoor Water Storage Tanks
17	0	821214	RLCA	Piping - Additional Samples
18	1	830524	SWEC	Verification of the Fire Protection Provided for Auxiliary Feedwater System Control Room Ventilation and Pressurization System Safety-Related Portion of the 4160V Electric System
19	0	821216	SWEC	Verification of the Post-LOCA Portion of the Radiation Environments used for Safety-Related Equipment Specification Outside Containment for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System
20	2	830725	SWEC	Verification of the Mechanical/Nuclear Design of the Control Room Ventilation and Pressurization System
21	1	830503	SWEC	Verification of the Effects of High Energy Line Cracks and Moderate Energy Line Breaks for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System
22	2	830725	SWEC	Verification of the Mechanical/Nuclear Portion of the Auxiliary Feedwater System
23	1	830527	SWEC	Verification of High Energy Line Break and Internally Generated Missile Review Outside Containment for Auxiliary Feedwater System and Control Room Ventilation and Pressurization System

E.1 ITRs In Numerical Sequence (Continued)

ITR	REV NO.	ISSUE DATE	ISSUED BY	TITLE
24	1	830504	SWEC	Verification of the 4160V Safety-Related Electrical Distribution System
25	1	830429	SWEC	Verification of the Auxiliary Feedwater System Electrical Design
26	1	830502	SWEC	Verification of the Control Room Ventilation and Pressurization System Electrical Design
27	2	830725	SWEC	Verification of the Instrument and Control Design of the Auxiliary Feedwater System
28	2	830725	SWEC	Verification of the Instrument and Control Design of the Control Room Ventilation and Pressurization System
29	0	820117	SWEC	Design Chain - Initial Samples
30	0	830112	RLCA	Small Bore Piping Report
31	1	830804	RLCA	HVAC Components
32	1	830401	RLCA	Pumps
33	1	830428	RLCA	Electrical Equipment Analysis
34	1	830324	SWEC	Independent Design Verification of DCP Efforts by SWEC
35	0	830401	RLCA	Independent Design Verification Program Verification Plan for DCP Activities
36	1	830620	SWEC	Final Report on Construction Quality Assurance Evaluation of G.F. Atkinson
37	0	830223	RLCA	Valves
38	2	830620	SWEC	Final Report on Construction Quality Assurance Evaluation of Wismer and Becker
39	0	830225	RLCA	Soils - Intake Structure Bearing Capacity and Lateral Earth Pressure

E.1 ITRs In Numerical Sequence (Continued)

ITR	REV NO.	ISSUE DATE	ISSUED BY	TITLE
40	0	830309	RLCA	Soils Report - Intake Sliding Resistance
41	0	830419	RFR	Corrective Action Program and Design Office Verification
42	0	830415	RFR	R.F. Reedy, Inc., Independent Design Verification Program Phase. II Review and Audit of PGandE and Design Consultants for DCNPP-1
43	0	830414	RLCA	Heat Exchangers
44	0	830415	RLCA	Shake Table Test Mounting Class 1E Electrical Equipment
45	0	830517	SWEC	Additional Verification of Redundancy of Equipment and Power Supplies in Shared Safety-Related Systems
46	0	830627	SWEC	Additional Verification of Selection of System Design Pressure and Temperature and Differential Pressure Across Power-Operated Valves
47	0	830627	SWEC	Additional Verification of Environmental Consequences of Postulated Pipe Ruptures Outside of Containment
48	0	830727	SWEC	Additional Verification of Jet Impingement Effects of Postulated Pipe Ruptures Inside Containment
49	0	830623	SWEC	Additional Verification of Circuit Separation and Single Failure Review of Safety-Related Electrical Equipment
50	0	830722	TES	Containment Annulus Structure Vertical Seismic Evaluation
51			TES	Corrective Action - Containment Annulus

E.1 ITRs In Numerical Sequence (Continued)

ITR	REV NO.	ISSUE DATE	ISSUED BY	TITLE
52	Replaced by ITR-68			
53	Replaced by ITR-68			
54			RLCA	Corrective Action Containment Building
55			RLCA	Corrective Action Auxiliary Building.
56			RLCA	Corrective Action Turbine Building
57	0	830801	RLCA	Review of DCP Activities Fuel Handling Building
58	0	830808	RLCA	Verification of DCP Activities Intake Structure
59			RLCA	Corrective Action Large Pipe Stress
60			RLCA	Corrective Action Large and Small Bore Pipe Supports
61			RLCA	Corrective Action Small Bore Piping
62	Combined with ITR-60			
63			RLCA	Corrective Action HVAC Ducts, Raceways, Instrument Tubing and Supports
64	Combined with ITR-63			
65			RLCA	Corrective Action Rupture Restraints
66	Combined with ITR-63			
67	0	830812	RLCA	Corrective Action Equipment
68			RLCA	Verification of HLA Soils Work

E.2A ITR/EOI CROSS REFERENCE

ITR	EOI
16	968, 969, 970, 981, 1070, 1094, 1100, 1101, 3000
17	1009, 1098, 1104, 1106, 1107, 1108
18	8019, 8020, 8021, 8035, 8036, 8037, 8038, 8039
19	NONE
20	8012, 8016
21	8011, 8014, 8028, 8029, 8030, 8031, 8050
22	8009, 8010, 8015, 8027, 8048, 8060, 8062
23	8007, 8008, 8049
24	8013, 8022, 8023, 8024, 8025, 8026, 8045
25	8011, 8042, 8043, 8044, 8061, 8063
26	8011, 8041, 8042, 8044, 8061
27	8018, 8032, 8047, 8049, 8051, 8052, 8054, 8055, 8057, 8058, 8059, 8060, 8064
28	8017, 8046, 8053, 8056, 8057, 8059
29	Design Chain - Non Seismic
30	1024, 1043 thru 1048, 1058, 1059
31	1018, 1061, 1083, 1096, 1102, 1120, and 1121
32	1020, 1022, 1072, 1073, 1113, 1114
33	949, 1004, 1006, 1007, 1008, 1087, 1117
34	Verification of DCP Efforts by SWEC
35	IDVP Verification Plan for DCP Activities by RLCA
36	9008, 9015, 9016, 9021
37	950, 998, 999, 1082, 1116
38	9001 thru 9007, 9009 thru 9014, 9017 thru 9020, 9022 thru 9029
39	1112

E.2A ITR/EOI CROSS REFERENCE

ITR	EOI
40	NONE
41	NONE
42	7001 thru 7006
43	978, 1088, 1099
44	1118, 1119
45	8012, 8016
46	8009, 8010, 8062
47	8001
48	7002, 8065
49	8017, 8057
50	1014
51	1014
52	See ITR-68
53	See ITR-68
54	1014
55	1028, 1097, 1124, 1132
56	1026
57	1092
58	1022
59	1098, 1126, 1133, 1135, 1138, 1141
60	1098, 1122, 1129, 1131, 1139, 1142
61	1098, 1141

E.2A ITR/EOI CROSS REFERENCE

ITR	EOI
62	Combined with ITR-60
63	983, 1003, 1123, 1134
64	Combined with ITR-63
65	1098
66	Combined with ITR-63
67	1128, 1130, 1136, 1140
68	None

NOTE:

The information on this Table excludes tabular material and appendixes.

E.2B EOI/ITR CROSS REFERENCE

EOI	ITR
910	7
920	6, 10
930	7
931	12
932	12
933	12
934	12
935	12
936	12
937	12
938	12
939	12
940	12
941	12
942	12
943	12
944	12
945	12
946	12
947	12
948	12
949	33
950	37
951	12
952	12
953	12
954	12
955	12
956	12
957	12
958	12
959	12
960	12
961	12
962	12
963	12
964	12
965	12
966	12
967	10
968	2, 13, 16
969	2, 13, 16
970	2, 13, 16

EOI	ITR
971	None
972	None
973	None
974	None
975	None
976	10, 11
977	50, 51
978	10, 11, 43
979	None
980	58
981	2, 10, 13, 16
982	2
983	7, 10, 63
984	2
985	6
986	6, 10
987	6
988	58
989	56
990	6
991	6
992	2
993	2
994	2, 12
995	12
996	12
997	12
998	37
999	37
1000	12
1001	12
1002	10
1003	15, 63
1004	10, 11, 33
1005	4, 10
1006	33
1007	4, 10, 33
1008	10, 33
1009	2, 10, 12, 17
1010	2, 7, 10
1011	3, 10
1012	3
1013	4, 10

E.2B EOI/ITR CROSS REFERENCE

EOI	ITR
1014	2, 10, 12, 50, 51, 54
1015	3, 10
1016	None
1017	3
1018	31
1019	12
1020	10, 32
1021	12
1022	2, 10, 32, 58
1023	12
1024	30
1025	10, 12
1026	7, 10, 56
1027	2, 6
1028	2, 6, 10, 55
1029	2, 6
1030	3
1031	12
1032	12
1033	None
1034	None
1035	None
1036	None
1037	None
1038	None
1039	None
1040	2
1041	2
1042	2
1043	30
1044	30
1045	30
1046	30
1047	30
1048	30
1049	4, 10
1050	12
1051	12
1052	2
1053	3, 10
1054	3
1055	10
1056	None

EOI	ITR
1057	12
1058	30
1059	30
1060	12
1061	31
1062	10, 12
1063	10, 12
1064	2
1065	2, 10
1066	2
1067	2
1068	2, 10
1069	12
1070	2, 6, 13, 16
1071	10, 12
1072	10, 32
1073	32
1074	10, 12
1075	12
1076	12
1077	15
1078	None
1079	2, 6
1080	10, 12
1081	10, 12
1082	37
1083	31
1084	10, 12
1085	10, 12
1086	10, 12
1087	33
1088	43
1089	None
1090	None
1091	6
1092	6, 57
1093	6, 7, 10
1094	13, 16
1095	6
1096	31
1097	6, 7, 10, 55
1098	12, 17, 59, 60, 61
1099	43

E.2B EOI/ITR CROSS REFERENCE

EOI	ITR
1100	13, 16
1101	12, 13, 16
1102	10, 31
1103	10, 12
1104	17
1105	12
1106	12, 17
1107	17
1108	17
1109	17
1110	15
1111	None
1112	39
1113	32
1114	32
1115	60
1116	37
1117	33
1118	44
1119	44
1120	67
1121	67
1122	60
1123	63
1124	55
1125	67
1126	59
1127	67
1128	67
1129	60
1130	67
1131	60
1132	55
1133	59
1134	63
1135	59
1136	67
1137	59
1138	59
1139	60
1140	67
1141	59, 61
1142	60

EOI	ITR
3000	2, 12, 13, 16
3001	2
3002	2
3003	2
3004	2, 10
3005	2, 10
3006	50, 51
3007	50, 51
3008	50, 51
6001	59, 60, 61
6002	65
7001	42
7002	42, 48
7003	42
7004	42
7005	42
7006	42

E.3A ITR/REPORT SECTION

ITR	SECTION 4.0 SUBSECTIONS
42	4.1.3, 4.2.1, 4.2.2, 4.2.3
43	4.6.5
44	4.9.1
45	4.8.2
46	4.8.3
47	4.8.4
48	4.8.5
49	4.8.6
50	4.4.5
51	4.4.5
52	See ITR-68
53	See ITR-68
54	4.4.4
55	4.4.2
56	4.4.8
57	4.4.3
58	4.4.6
59	4.5.2
60	4.5.2
61	4.5.3
62	See ITR-60
63	4.6.6
64	See ITR-63
65	4.9.3
66	See ITR-63
67	4.6.2, 4.6.4, 4.6.5, 4.6.6, 4.6.7, 4.6.9, 4.9.1
68	4.9.2

SECTION 4.0 SUBSECTIONS	ITR
	Report Sections 0.0 through 3.7.3 have no ITRs
4.0	None
4.1	None
4.1.1	None
4.1.2	None
4.1.3	11, 22, 42
4.1.4	5, 9, 29
4.1.5	5, 29
4.1.6	None
4.2	None
4.2.1	2, 9, 29, 36, 38, 41, 42
4.2.2	2, 42
4.2.3	2, 10, 41, 42
4.2.4	36, 38
4.3	None
4.3.1	None
4.3.2	10, 41
4.3.3	None
4.3.4	None
4.4	None
4.4.1	6
4.4.2	6, 55
4.4.3	57
4.4.4	54
4.4.5	50, 51
4.4.6	58
4.4.7	None
4.4.8	56
4.5	None
4.5.1	None
4.5.2	12, 17, 59, 60
4.5.3	30, 61
4.6	None
4.6.1	None
4.6.2	3, 67
4.6.3	37
4.6.4	32, 67
4.6.5	43, 67
4.6.6	15, 31, 63, 67
4.6.7	33, 67
4.6.8	7, 63
4.6.9	67

F.1 ACRONYMS AND INITIALISMS

AEC	Atomic Energy Commission
AFW	Auxiliary Feedwater (System)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALDI	Applicable Licensing Document Index
ANCO	Applied Nucleonics Incorporated
ANI	Authorized Nuclear Inspector
ANS	American Nuclear Society
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASW	Auxiliary Salt Water (Pump)
AWWA	American Water Works Association
Blume	URS/John A. Blume and Associates, Engineers
BPC	Bechtel Power Corporation
CAP	Corrective Action Program
CCW	Component Cooling Water (System)
CI	Closed Item
CMTR	Certified Material Test Report
CQA	Construction Quality Assurance
CR	Completion Report
CRVP	Control Room Ventilation and Pressurization (System)
DCM	Design Criteria Memorandum
DCNPP	Diablo Canyon Nuclear Power Plant
DCP	Diablo Canyon Project (PGandE and BPC)
DDE	Double Design Earthquake
DE	Design Earthquake
DEV	Deviation
DFOT	Diesel Fuel Oil Transfer
DMD	Design Methodology Deficiency
DOP	Designated Other Parties
DOV	Design Office Verification
EDS	EDS Nuclear, Inc.

EES	Cygna Energy Services (formerly, Earthquake Engineering Services)
EOI	Error or Open Item
ER	Error Report
ER/A	Error Class A
ER/B	Error Class B
ER/C	Error Class C
ER/D	Error Class D
ER/AB	Error Class A or Class B
FCV	Flow Control Valve
FID	Field Inspection Deficiency
FOT	Fuel Oil Transfer (Pump)
FSAR	Final Safety Analysis Report
FT	Flow Transmitter
GEZ	Garretson-Elmendorf-Zinov
GFA	Guy F. Atkinson Co.
GTAW	Gas Tungsten Arc Welding
HELB	High Energy Line Break
HELC	High Energy Line Crack
HLA	Harding Lawson Associates
HVAC	Heating, Ventilation, and Air Conditioning (System)
I&C	Instrumentation & Control
ICD	Independent Calculation Deficiency
IDVP	Independent Design Verification Program
IEEE	Institute of Electronic & Electrical Engineers
IGM	Internally Generated Missile
ITP	Internal Technical Program (of the DCP)
ITR	Interim Technical Report
LCV	Level Control Valve
LOCA	Loss-of-Coolant Accident
MAFW	Motor Driven Auxiliary Feedwater (Pump)
MELB	Moderate Energy Line Break
MS	Main Steam
NCR	Nonconformance Report
NDE	Non-Destructive Examination

NEMA	National Electrical Manufacturing Association
NFPA	National Fire Protection Association
NPSH	Net Positive Suction Head
NPSHa	Net Positive Suction Head available
NQAM	Nuclear Quality Assurance Manual (Bechtel)
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
NSC	Nuclear Service Corp.
NSSS	Nuclear Steam Supply System
OD	Other Deficiency
OIP	Open Item Transferred to PGandE
OIR	Open Item Report
OWST	Outdoor Water Storage Tanks
PEI	Project Engineering Instructions (DCP)
PER	Potential Error Report
PGandE	Pacific Gas and Electric Company
PMP	Program Management Plan
PPRR	Potential Program Resolution Report
PRAP	Probabilistic Risk Assessment Programs
PRR	Program Resolution Report
PSRC	Plant Staff Review Committee (PGandE)
QA	Quality Assurance
QAP	Quality Assurance Program
QAR	Quality Assurance Audit & Review
RCS	Reactor Coolant System
RFR	Roger F. Reedy Inc.
RHR	Residual Heat Removal
RLCA	Robert L. Cloud Associates
RRA	Radiation Research Associates
SAT	Spectral Acceleration Factors
SIFPR	Supplementary Information for Fire Protection Review
SMAW	Shield Metal Arc Weld
SWEC	Stone & Webster Engineering Corporation
SWSQAP	Stone & Webster Standard Nuclear Quality Assurance Program

TAFW	Turbine-Drive Auxiliary Feedwater Pump
TES	Teledyne Engineering Services
TMI	Three Mile Island
W&B	Wismer & Becker
Wyle	Wyle Laboratories