

ORGANIZATION: BECHTEL POWER CORPORATION
SAN FRANCISCO POWER DIVISION
SAN FRANCISCO, CALIFORNIA

REPORT NO.: 99900522/82-03	INSPECTION DATE(S) 11/29-12/2/82	INSPECTION ON-SITE HOURS: 28
CORRESPONDENCE ADDRESS: Bechtel Power Corporation San Francisco Power Division ATTN: Mr. C. D. Statton, Vice Pres. and Gen. Mgr. P. O. Box 3965 San Francisco, CA 94119		
ORGANIZATIONAL CONTACT: Mr. E. R. Nelson, Manager of Division QA TELEPHONE NUMBER: (415) 768-0777		
PRINCIPAL PRODUCT: Architect engineering services.		
NUCLEAR INDUSTRY ACTIVITY: The total effort committed to domestic nuclear activities is approximately 92 percent of the 7100 person staff of the San Francisco Power Division. The division currently provides the principal architect engineering services for 4 domestic units: Limerick 1 and 2, Susquehanna 2, and Hope Creek 1. In addition, this division has the project management for Diablo Canyon 1 and 2, 12 units under a modification/repair/service-type contract, and an engineering evaluation contract with an NSSS supplier.		
ASSIGNED INSPECTOR:	<u>C. J. Halper</u> J. R. Postello, Reactor Systems Section (RSS)	<u>1/27/83</u> Date
OTHER INSPECTOR(S):		
APPROVED BY:	<u>C. J. Hale</u> C. J. Hale, Chief, RSS	<u>1/27/83</u> Date
INSPECTION BASES AND SCOPE:		
A. <u>BASES</u> : 10 CFR Part 50, Appendix B.		
B. <u>SCOPE</u> : Procurement source selection and product acceptance.		
PLANT SITE APPLICABILITY:		
Docket Nos. 50-387, 50-388, and 50-355.		

DESIGNATED ORIGINAL
Certified By Chuanne Clark

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RESULTS:

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A. VIOLATIONS:

None

B. NONCONFORMANCES:

Contrary to the requirements of Criterion V of 10 CFR Part 50, Appendix B, documented procedures and instructions and their implementation, did not provide for the appropriate product quality analysis, inspection, and/or qualification of ITT-Grinnell clamps and Pacific Scientific shock assemblies.

C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

Procurement Source Selection/Product Acceptance - Applicable procurement procedures, quality assurance procedures, and project procedures were examined to determine quality program commitments. To verify implementation of these commitments, the following documents were examined: one centralized information dissemination system, one evaluated supplier list, five supplier performance evaluation reports, five supplier evaluation review reports, five supplier quality program evaluation reports, five supplier quality program evaluation checklists, five quality program audits, three supplier quality program audit checklists, three purchase orders, six quality surveillance reports, four specifications, five letters and memos, two management corrective action reports, one quality surveillance plan, and one quality surveillance report.

Relative to the documents examined, one nonconformance was identified (see B above). There were no violations or unresolved items.

In regard to the nonconformance identified in this area of the inspection, the following observations were noted:

1. The clearance between the Pacific Scientific shock body and the ITT-Grinnell pipe clamp would not permit the required lateral movement of five degrees in either direction.
 - a. Restraining the shock from swinging through an arc of \pm five degrees can result in a case where the snubber would bend during thermal movement of the system. This, in turn, can cause overstressing of the pipe and/or loss of operability of the shock.

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- b. Both the shock and pipe clamps were off-the-shelf items and were shipped separately.
 - c. There was no evidence that a complete dimensional analysis had been performed to assure the shocks and clamps could be assembled and meet the requirements for lateral movement of \pm five degrees.
 - d. There was no evidence that the critical dimensions had been identified to inspection personnel or that a complete first article dimensional inspection had been performed.
 - e. There was no evidence that any effort had been made to qualify the equipment for its intended usage.
2. In several cases, the ITT-Grinnell clamps for shock assembly sizes 1, 3, 10, 35, and 100 were not installable as received and required coping of clamp corners and/or ends to facilitate field installation. The trimming of the clamp ears without prior engineering analysis and justification could result in unacceptably large areas of the clamp being removed, thus overstressing the clamp when subjected to the design loads.
 3. Friction clamps supplied by ITT-Grinnell for pipe sizes 2" or less called for a gap on either side of the clamp. In some cases, no gap was provided. Due to allowable manufacturing tolerances on the pipe and clamps, and such deviations from drawing requirements, no gap was provided. When installed, this resulted in a lack of friction, thus negating their design functions.

The following items will be reviewed further during subsequent inspections: (1) the control and engineering evaluation associated with the modifications of these shock assemblies made in the field; and (2) the assessment of the generic implications of these product errors and the actions taken relative to other projects that are affected.

1	2	TITLE/SUBJECT	3	4
1	8	Topical Report No. BQ-TOP-1	10/80	3A
2	4	Procurement Supplier Quality Manual	9/15/82	1
3	8	Centralized Info Dissemination System	10/13/82	-
4	8	Evaluated Supplier List	10/29/82	-
5	8	Supplier Performance Evaluation Report Pullman Power Products	10/23/81	-
6	8	Supplier Evaluation Review Report " " "	3/26/81	-
7	8	Supplier Quality Program Evaluation Report " " "	4/26/82	-
8	8	Supplier Quality Program Evaluation Checklist " " "	4/7/80	-
9	8	Full Scope Audit of Quality Program " " "	8/25/82	-
10	8	Supplier Performance Evaluation Report Victorcen Inc.	4/6/82	-
11	8	Supplier Evaluation Review Report " " "	8/18/82	-
12	8	Supplier Survey Summary And Recommendations " " "	7/18/79	-
13	8	Supplier Quality Program Evaluation Report " " "	7/29/82	-
14	8	Supplier Quality Program Evaluation List " " "	2/24/82	-
15	8	Report at Audit Supplier Quality Program " " "	9/8-10/82	-
16	8	Supplier Quality Program Audit Checklist " " "	9/24/81	-

Document Types:

- 1. Drawing
- 2. Specification
- 3. Procedure
- 4. QA Manual
- 5. Purchas Order
- 6. Internal Memo
- 7. Letter
- 8. Other (Specify-if necessary)

Columns:

- 1. Sequential Item Number
- 2. Type of Document
- 3. Date of Document
- 4. Revision (If applicable)

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1	2	TITLE/SUBJECT	3	4
17	8	Supplier Performance Evaluation Report The Zack Co.	5/10/82	-
18	8	Supplier Evaluation Review Report " " "	3/18/82	-
19	8	Report of Audit Supplier Quality Program " " "	11/18-20/82	-
20	8	Supplier Quality Program Audit Checklist " " "	11/19/81	-
21	8	Supplier Quality Program Evaluation Report " " "	6/10/82	-
22	8	Supplier Performance Evaluation Report ITT Grinnell Corp	4/2/82	-
23	8	Supplier Evaluation Review Report " " "	12/24/80	-
24	8	Supplier Quality Program Evaluation Report " " "	6/11/82	-
25	8	Supplier Quality Program Evaluation Checklist " " "	2/19/81	-
26	8	Report of Audit Supplier Quality Program " " "	10/14-16/81	-
27	8	Supplier Performance Evaluation Report Pacific Scientific	3/31/82	-
28	8	Supplier Evaluation Report " " "	4/21/80	-
29	8	Commodity Survey Manufacturing And Quality Control " " "	7/15/75	-
30	8	Supplier Quality Program Evaluation Report " " "	11/1/82	-
31	8	Report of Audit Supplier Quality Program " " "	2/24-26/82	-
32	8	Supplier Quality Program Audit Checklist " " "	5/7/76	-

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Inspector J.R. Costello
 Scope/Module Procurement/30991B*
30995B

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
33	B 5	Purchase Order # 0056-P-3-Ac - ITT Grinnel Corp., Pipe Hangers, Supports and Restraints	6/10/02	42
34	B	Quality Surveillance Deficiency Report - Programmatic QSDR 01-2 - Use of non hardened washers	4/3/02	-
35	B	Field Material Requisition - Permanent Plant Process Hangers	0/20/02	-
36	B	PSQD Annual Audit of ITT Grinnel, Warren Ohio	10/15/01	-
37	B	PLNQA Audit P-82-02, ITT Grinnel Corp. - Pipe Hanger Division	1/12-13/02	-
38	2	Technical Specification No 0056-M-209, Pipe Hangers, Supports And Restraints	12/26/73 10/7/73	2
39	2	"	5/17/79	13
40	2	Addendum # 2 To Technical Specification For Installation, Inspection And Documentation of Pipe Supports, Hangers And Restraint.	6/13/02	11

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1	2	TITLE/SUBJECT	3	4
41	8	Quality Surveillance Report QSR No 385 Final Inspection ITT Grinnell Pipe Hangers	11/8-12/82	-
42	7	D.E. Millin, ITT Grinnell Corp to E. Poser, Bechtel - ITT Grinnell Figure 306/307 Mechanical Snubber Attachment Clearances	11/16/82	-
43	6	G.C. Bell to Distribution - Pipe Hanger Anomalies	8/11/82	-
44	7	E.B. Poser ^{Bechtel} to T.M. Cummins Jr, PP&L - Resolution of the Snubber Installation Problems as Identified on PP&L NCR - 82-820	11/8/82	-
4	7	T.T. Martin, Reg I USNRC to B. D. Kenyon, P.P&L - Inspection No 50-387/82-34 Susquehanna Steam Electric Station	11/3/82	-
46	8	MCAR 1-81 (Part I) - Interim Report On Inadequate Clearance Between Pacific Scientific Sheels And ITT Grinnell Pipe Clamps / Coping of clamps	10/82	-

Document Types:

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Inspector J. R. Castello
 Scope/Module Procurement / 38991 B 2
389958

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
47	8	MCAR 1-01 (Part II) - Interim Report On Failure of Friction Clamps To Perform Designed Functions	10/8/02	-
48	6	Y. K. Chhabra to L. Memula - Small Pipe Support Assembly Drawing SPH - 800	8/10/02	-
49	8	Surveillance Inspection Report BPE 221 Report # BQ	12/11-12/74	-
50	3	ITT Grinnell Corp, Pipe Hangers & Supports Surveillance Inspection Report #1 - Initial Inspection	5/8/74	-
51	6	ITT Grinnell Corp Pipe Hangers & Supports L.J. Anderson Secretary 10CFR 21 Evaluation Committee to Bob Elias Plant Design Chief Engineer Subject 10CFR 21 Evaluation of Shock Suppressor / Pipe Clamp Deficiencies	11/12/02	-
52	2	Specification No. 8856-J-65 - Design Specification for Central Valves In Nuclear Service For The Susquehanna Steam Electric Station Units 1 and 2	1/26/02	6

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38995B

DOCUMENTS EXAMINED

1	2	3	4
	TITLE/SUBJECT		
53	P.O. 8856, J-65-AG - Masencian, Material Control Valves	-	18
54	Quality Surveillance Report No. 63 - Masencian Division M ² Gray Edison	10/25/82	-
55	P.O. 8856 - P-3-BC, Pacific Scientific Ken-Tech Division	6/7/78	-
56	Quality Surveillance Plan 8856 - P-3-BC, Piping Supports	6/29/78	-
57	Quality Surveillance Report PSQ-221A, QSR Ne BB Pacific Scientific - Shock Arresters & Hardware	10/29/82	-
58	EDP-4.58 Specifying and Reviewing Supplier Engineering And Quality Verification Documentation	12/2/77	3
59	EDP-6.10 Specification Of Supplier Quality Assurance Program Requirements	5/13/77	2
60	EDP-6.11 Evaluation Of Supplier Quality Assurance Programs	5/13/77	0

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