

ORGANIZATION: PACIFIC PUMPS DIVISION  
HUNTINGTON PARK, CALIFORNIA

REPORT NO: 99900063/82-01	INSPECTION DATE(S) 4/20-22/82	INSPECTION ON-SITE HOURS: 17
CORRESPONDENCE ADDRESS: Pacific Pumps Division ATTN: Mr. D. J. Moyer Manager, Quality Assurance 5715 Bickett Street Huntington Park, CA 90255		
ORGANIZATION CONTACT: Mr. D. J. Moyer, Quality Assurance Manager TELEPHONE NUMBER: (213) 588-2203		
PRINCIPAL PRODUCT: Nuclear Pumps		
NUCLEAR INDUSTRY ACTIVITY: Current activity is limited to replacement and/or spare parts.		
ASSIGNED INSPECTOR: <u>I. Barnes</u> for L. E. Ellershaw, Reactive & Components Program Section (R&CPS)		<u>7-22-82</u> Date
OTHER INSPECTOR(S):		
APPROVED BY: <u>I. Barnes</u> I. Barnes, Chief, R&CPS		<u>7-22-82</u> Date
INSPECTION BASES AND SCOPE:		
A. <u>BASES</u> : 10 CFR Part 50, Appendix B.		
B. <u>SCOPE</u> : This inspection was conducted as a result of linear indications being observed in the intermediate covers of safety injection pumps furnished to Texas Utilities Generating Company's Comanche Peak Steam Electric Station, Units 1 and 2.		
PLANT SITE APPLICABILITY: 50-445 and 50-446		
DESIGNATED ORIGINAL Certified By <u>Kheanne Jouts</u>		

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A. <u>VIOLATIONS:</u> None		
B. <u>NONCONFORMANCES:</u> Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Visual Inspection Procedure No. 037-2-0030-0, intermediate cover castings with visible linear indications well in excess of the allowable 1/16" (some being 1" or greater) were accepted by receiving inspection, processed through manufacturing, final inspected, and assembled into safety injection pumps which were subsequently furnished to Texas Utilities Generating Company's Comanche Peak Steam Electric Station, Units 1 and 2.		
C. <u>UNRESOLVED ITEMS:</u> None		
D. <u>OTHER FINDINGS OR COMMENTS:</u> Texas Utilities Generating Company (TUGCO) notified the NRC Resident Inspector on April 15, 1982, of a potential 10 CFR Part 50.55(e) Construction Deficiency Report regarding cracks being found in the multi-vane diffusers in the number one safety injection (SI) pump (Serial No. 51928) for Comanche Peak Unit 2, during a tear-down inspection by site QC personnel. The pump manufacturer was identified as Pacific Pumps Division (PPD).  For clarification of part nomenclature, PPD's drawings identified these parts as Intermediate Covers.  The tear-down inspection was made because this pump was being moved to Unit 1 to replace SI pump Serial No. 51667, which had been returned to PPD due to detected rubbing sounds.  The NRC inspector visited the Comanche Peak site on April 16, 1982, to observe the cracks. Each intermediate cover exhibited one or more cracks, nearly all of which appeared to extend through the web and back from the outside diameter (OD) by as much as 1". The OD is a machined surface and the cracks were clearly visible.  During the visit, site QC personnel removed the casing from SI pump Serial No. 51929, and similar cracks were observed in these intermediate covers. (Note: there are 10 intermediate covers in these SI pumps, one of which is welded to the discharge diffuser.)  During the visit to PPD, the NRC inspector viewed the intermediate covers from the returned SI pump, Serial No. 51667, which had been disassembled by PPD. Again, cracks were observed.		

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<p>Discussions were held between PPD and their customer (Westinghouse Electric Corp.) regarding the use of two similar SI pumps being held in storage as possible replacements for two of the Comanche Peak pumps. The two pumps in storage had originally been manufactured for a site which was subsequently cancelled.</p> <p>The two pumps, Serial Nos. 51649 and 51650, were returned to PPD from storage, disassembled, and inspected. The intermediate covers exhibited some cracks, none of which were as severe as those already observed.</p> <p>A review of the associated documentation for the Comanche Peak SI pumps was conducted. It was determined that the intermediate cover castings were supplied by Quali-Cast Corporation and the material is ASTM A-296 CA 6NM. The purchase specifications, incorporated into purchase orders dated April 26, 1976, and January 19, 1977, required visual inspection by the foundry, using MSS SP-55 as the visual inspection acceptance standard. MSS SP-55 does not allow linear indications. A review of Quali-Cast Corporation's Material Test Report &amp; Data Sheets for these castings dated April 8 and May 6, 1977, showed the castings to have been visually and dimensionally inspected, and weld repairs were examined by the magnetic particle method after postweld heat treatment.</p> <p>The castings used in the Comanche Peak SI pumps were received at PPD on April 19 and May 17, 1977. Review of the Receiving Acceptance Records showed that the castings were accepted on April 23 and May 18, 1977, after the identity was verified and visual inspection performed in accordance with Procedure No. 037-2-0030, Revision 0.</p> <p>A review of the Route Sheets associated with these castings revealed that all subsequent machining, inspection, and assembly operations were signed/ stamped and dated. All operations were complete as of October 31, 1977. During the manufacturing process, Rejected Material Reports (RMR) were generated which addressed rework of certain dimensions and weld repairs due to porosity and cracks, primarily in the vanes. The RMR's showed that all rework and repairs were performed and subsequently accepted.</p> <p>After assembling the pumps and running performance tests, the Manufacturer's Data Reports, Form NPV-1, were filled out and dated as follows: Pump Serial No's. 51667 and 51668, 10/19/77; pump Serial No. 51928, 11/30/77, and pump Serial No. 51929, 12/28/77. The pumps were then shipped to the site. PPD has provided a total of 53 SI pumps to Westinghouse Electric Corporation; 24, 3"-11 stage and 29, 3"-10 stage. All of the 11 stage pumps and 24 of the 10 stage pumps were supplied for domestic commercial nuclear sites. There are a total of 501 intermediate cover castings in these pumps, all of which were supplied by Quali-Cast Corporation.</p>		



Inspector L. EilershawScope/Module 292705BDocket No. 99900063  
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1	2	TITLE/SUBJECT	3	4
1	2	Westinghouse Egg T Specification No. 678815	11-12-71 Thru 9-6-73	2
2	2	Westinghouse Egg T Specification No. 92516 (Addendum)	10-14-75	2
3	5	Westinghouse Purchase Order No. - 236950BPE	6-27-75 7-25-77	Thru Rev. 8
4	1	Pacific Pumps Drawing No. 300-J49738	-	4
5	8	Pacific Pumps Vendor Surveillance Records of Quali-Cast Corp.	-	-
6	3	Visual Examination Procedure No. 037-2-0030-0	7-26-76	-
7	8	All Route Sheets of intermediate covers in Comanche Peak SI Pumps	-	-
8	8	Four Reject Material Reports	-	-
9	8	Receiving Acceptance Records	-	-
10	8	Material Test Report & Data Sheets from Quali-Cast Corp.	-	-
11	4	Pacific Pumps Division QA Manual	9-1-81	5
12	8	Summary of Processes No. SP-10	4-26-76 5-2-78	Thru Rev. 7
13	1	Drawing No. 500-J49728	3-4-76 Thru 4-11-79	Thru Rev. 6
14	5	Pacific Pumps Purchase Orders to Quali-Cast Corp, Nos. M1179 & N1424	4-26-76 1-19-77	

## Document Types:

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

## Columns:

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