

DATE: 11/12/82

TO: Jim Foster, Region III

FROM: Gonzalo Hernandez, Region I

SUBJECT: ① Newspaper accounts

② Zack allegation

③ Code requirements on 3/11
taper

④ Bechtel specification WQ-2
allegation.

} San
Onofre
allegation

Jim,
Here is the information you requested, hope it
helps.

Gonzalo Hernandez

3) Allegation:

The ASME Code requires adequate root penetration of fillet welds. I recall that some of the vendor supplied welded hardware appeared to not have adequate root penetration. The one vendor I can recall is "Zack", I believe a supplier of HVAC equipment. I remember one instance on a piece of Zack hardware where a fillet weld with inadequate welding 'was' identified during inspection on site. This instance was subsequently corrected by weld repair after installation in the plant. I don't remember if this equipment was used in SONGS Units 2 and 3. I recommend that the NRC examine the beginning and end of fillet welds to assure root penetration at these areas and verify that all craters are filled, and conduct destructive testing of selected supports supplied by this vendor to determine if other fillet welds and groove welds have adequate root penetration, or other code violations.

(13) Bechtel specification WQ-2, Sheet 20, note 1, requires, "shall not exceed $\frac{1}{8}$ inch ..." regarding maximum groove weld reinforcement height at Midland Michigan's twin nuclear plant. This requirement should read "shall not exceed $\frac{1}{8}$ inch ..." as required by the ASME Section III code on groove weld reinforcement. The $\frac{1}{8}$ inch height may be, also mistakenly implemented at San Onofre.

NB-4230 FITTING AND ALIGNING

NB-4231 Fitting and Aligning Methods

Parts that are to be joined by welding may be fitted, aligned, and retained in position during the welding operation by the use of bars, jacks, clamps, tack welds, or temporary attachments.

NB-4231.1 Tack Welds. Tack welds used to secure alignment shall either be removed completely, when they have served their purpose, or their stopping and starting ends shall be properly prepared by grinding or other suitable means so that they may be satisfactorily incorporated into the final weld. Tack welds shall be made by qualified welders using qualified welding procedures. When tack welds are to become part of the finished weld, they shall be visually examined and defective tack welds removed.

NB-4231.2 Temporary Attachments and Their Removal. Attachments which are welded to the component during construction but which are not incorporated into the final component, such as alignment lugs or straps, tie straps, braces, preheat equipment, postweld heat treatment equipment, are permitted, provided the requirements of (a) through (h) below are met.

(a) The material is identified and is suitable for welding but need not be certified material.

(b) The material is compatible for welding to the component material to which it is attached.

(c) The welding material is compatible with the base material and is certified in accordance with NB-2130;

(d) The welder and welding procedure are qualified in accordance with Section IX and the additional requirements of NB-4320.

(e) The immediate area around the temporary attachment is marked in a suitable manner so that after removal the area can be identified until after it has been examined in accordance with (g) below.

(f) The temporary attachment is completely removed in accordance with the procedures of NB-4211.

(g) After the temporary attachment has been removed, the marked area is examined by a magnetic particle or liquid penetrant method in accordance with the requirements of Articles 6 and 7 of Section V and meets the acceptance standards of NB-5340 or NB-5350, as applicable.

(h) The attachment weld or the area after removal of the attachment is postweld heat treated in accordance with NB-4600.

NB-4232 Maximum Offset of Aligned Sections

(a) Alignment of sections shall be such that the maximum offset of the finished weld will not be greater than the applicable amount listed in Table NB-4232-1, where t is the nominal thickness of the thinner section at the joint.

(b) Joints in spherical vessels, joints within heads, and joints between cylindrical shells and hemispherical heads shall meet the requirements in Table NB-4232-1 for longitudinal joints.

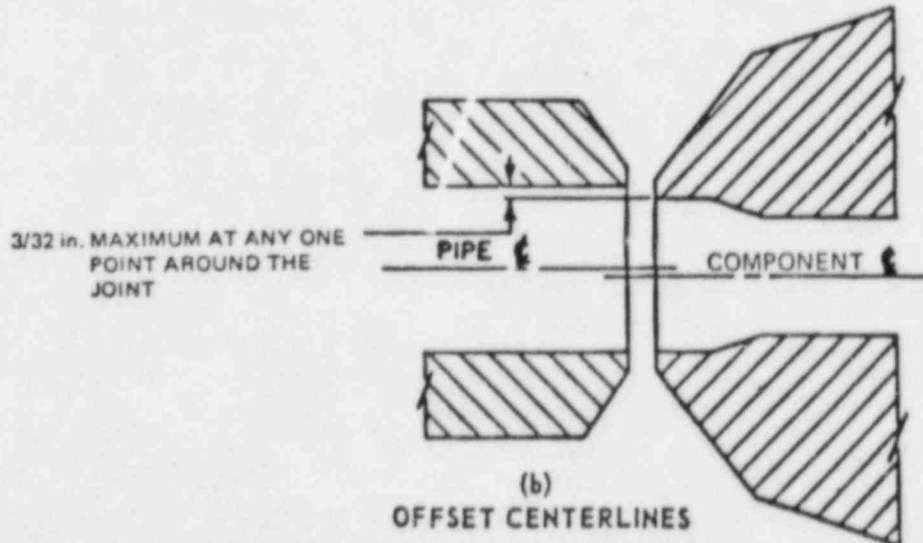
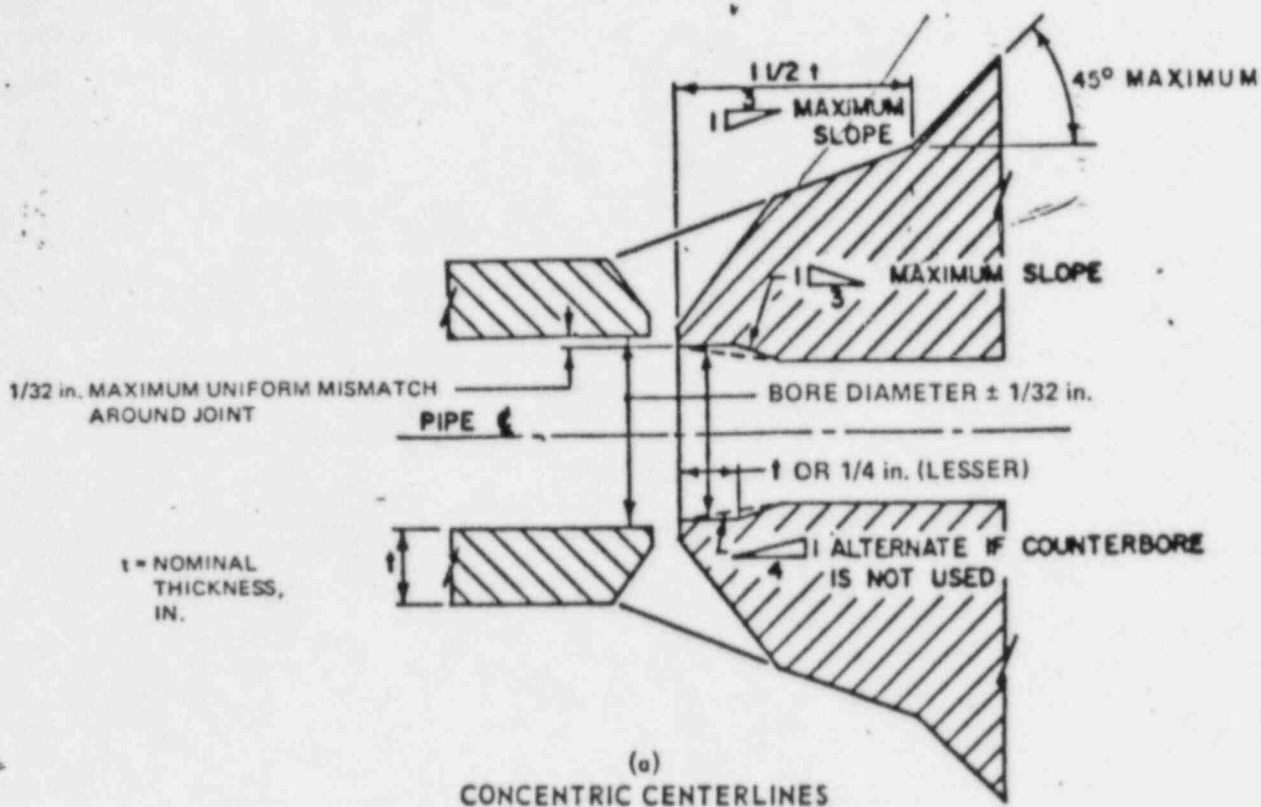
NB-4232.1 Fairing of Offsets. Any offset within the allowable tolerance provided above shall be faired to at least a 3 to 1 taper over the width of the finished weld or, if necessary, by adding additional weld metal beyond what would otherwise be the edge of the weld. In addition, offsets greater than those stated in Table NB-4232-1 are acceptable provided the requirements of NB-3200 are met.

NB-4233 Alignment Requirements When Component Inside Surfaces Are Inaccessible

When the inside surfaces of components are inaccessible for welding or fairing in accordance with NB-4232.1, the inside diameters shall match each other within $1/16$ in. When the components are aligned concentrically, a uniform mismatch of $1/32$ in. around the joint can result as shown in Fig. NB-4233-1 sk. (a). However, other variables not associated with the diameter of the component often result in alignments that are offset rather than concentric. In these cases, the maximum misalignment at any one point around the joint shall not exceed $3/32$ in., as shown in Fig. NB-4233-1 sk. (b). Should component tolerances such as diameter, wall thickness, out of roundness, result in inside diameter variations which do not meet these limits, the inside diameters shall be counterbored, sized, or ground to produce a bore within these limits.

TABLE NB-4232-1
MAXIMUM ALLOWABLE OFFSET IN
FINAL WELDED JOINTS

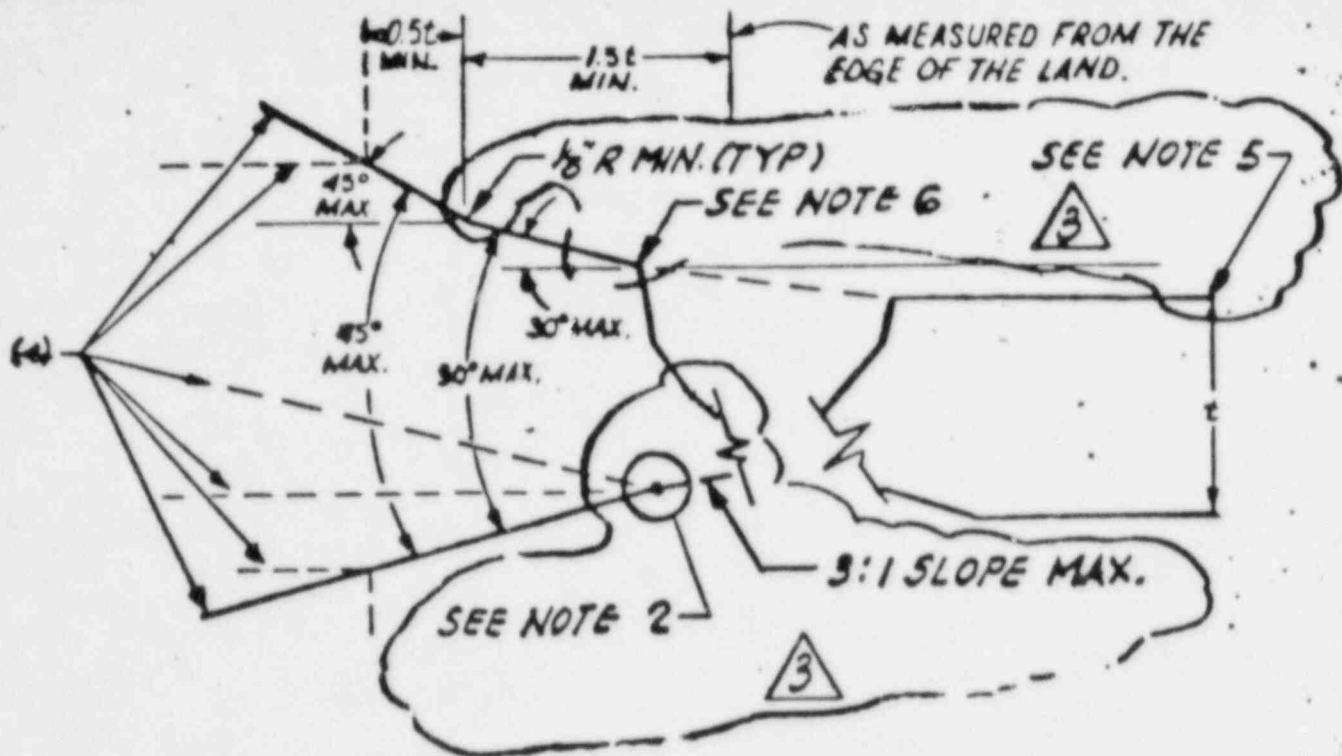
Section Thickness In In.	Direction of Joints	
	Longitudinal	Circumferential
Up to 1/2, incl.	1/4 t	1/4 t
Over 1/2 to 3/4, incl.	1/8 in.	1/4 t
Over 3/4 to 1-1/2, incl.	1/8 in.	3/16 in.
Over 1 1/2 to 2, incl.	1/8 in.	1/8 t
Over 2	Lesser of 1/16 t or 3/8 in.	Lesser of 1/8 t or 3/4 in.



NOTE

THE COMBINED INTERNAL AND EXTERNAL TRANSITION OF THICKNESS SHALL NOT EXCEED AN INCLUDED ANGLE OF 30° AT ANY POINT WITHIN $1\frac{1}{2}t$ OF THE LAND.

FIG. NB-4233-1 BUTTWELD ALIGNMENT TOLERANCES AND ACCEPTABLE SLOPES FOR UNEQUAL I.D. AND O. D. WHEN INSIDE SURFACE IS INACCESSIBLE FOR WELDING OR FAIRING



1. TRANSITIONS ARE FOR VALVES, FITTINGS, AND EQUIPMENT.
2. FOR WELD END PREPS SEE DRAWING 40048 OR 40049.
3. t = NOMINAL WALL THICKNESS.
4. INTERIOR AND EXTERIOR TRANSITION ANGLES SHALL NOT BE COMBINED SO AS TO DECREASE MINIMUM REQUIRED WALL THICKNESS.
5. THE VALUE OF $t_{MIN.}$ IS WHICHEVER OF THE FOLLOWING IS APPLICABLE:
 - (a) THE MIN. ORDERED WALL THICKNESS OF THE PIPE
 - (b) 0.875 TIMES NOM. WALL THICKNESS OF PIPE ORDERED TO A PIPE SCHEDULE WALL THICKNESS WHICH HAS AN UNDER TOLERANCE OF 12.5%.
 - (c) THE MIN. ORDERED WALL THICKNESS OF THE CYLINDRICAL WELDING END OF A COMPONENT OR FITTING (OR THE THINNER OF THE TWO) WHEN THE JOINT IS BETWEEN TWO COMPONENT.
6. THE MAX. THICKNESS AT THE END OF THE COMPONENT IS:
 - (a) THE GREATER OF ($t_{MIN.} + 0.15$ IN.) OR 1.15 t_{MIN} WHEN ORDERED ON A MIN. WALL BASIS.
 - (b) THE GREATER OF ($t_{MIN.} + 0.15$ IN.) OR 1.10 $t_{NOM.}$ WHEN ORDERED ON A NOM. WALL BASIS.

QC I/II

3	ADDED NOTES 5, 6 AND ADDITIONAL INFO	6-21-78	RM	GR	20							
2	.5t MIN. REVISED TO .5t MIN.	6-12-75	LM	JRH	20	EG						
1	REDRAWN FROM DWG 40050 REV. '0'	4-2-75	LOMEL	JRH	20	EG						
NO.	REVISIONS	DATE	DR.	CHK.		EGS.			CHK.	E.	QAE.	
BECHTEL POWER CORPORATION BORWALK, CALIFORNIA		J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION									
		FILE	WELDED END TRANSITIONS FOR VALVES, FITTINGS, AND EQUIPMENT									
JOB NO. 10079-003	DATE	APPROVED	SOUTHERN CALIFORNIA EDISON COMPANY SCALE LOS ANGELES, CALIF.									

United States Senate

WASHINGTON, D.C. 20510

October 29, 1982

Mr. Carlton Kammerer, Director
Office of Congressional Affairs
Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

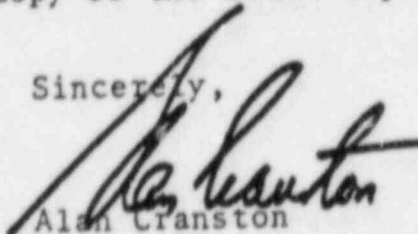
Dear Mr. Kammerer,

The enclosed correspondence from the Community Energy Action Network and the article from the Los Angeles Times have brought to my attention a possible problem with welds at the San Onofre nuclear power plant in California. According to these sources, E. Earl Kent, a former quality control engineer with Bechtel Power Corporation, has noted "thousands of substandard welds on pipe and electrical system supports" at both San Onofre and another plant in Michigan. Mr. Kent alleges that if these welds fail, the pipe and conduits could bend and break, threatening the systems which cool the reactor and which carry radioactive water within the containment building.

The news article notes that the Nuclear Regulatory Commission is investigating these charges. I trust that the investigation will be comprehensive and thorough and that the NRC will take any steps necessary to assure itself -- and the public -- of the safety of these nuclear plants. It is essential that unit 2 of San Onofre, which the NRC has authorized to go to full power operation, and unit 3 which may reach that stage by year's end, be built according to the very highest safety standards, even if a delay in full-power operation is necessary.

I would appreciate knowing the scope and progress of your investigation and receiving a copy of the final report when the inquiry is completed.

Sincerely,



Alan Cranston

Enclosure

~~11/1/82~~
p G/12

NOV 0 5 1982

Keppler,RIII w/inc

OFFICE ▶	RV	EDO <i>OK</i>	OCA			G/13	
SURNAME ▶	JCrews/kj	WJDircks <i>OK</i>					
DATE ▶	11/03/82	11/4/82	11/ /82				