NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 1 1982

MEMORANDUM FOR: Darrell G. Eisenhut, Director, Division of Licensing, NRR

FROM: Edward L. Jordan, Director, Division of Engineering and Quality Assurance, IE

SUBJECT: REVISED RECOMMENDATIONS FOR BOARD NOTIFICATION

REFERENCES: (1) Memorandum dated August 23, 1982 Jordan to Eisenhut, "Proposed Board Notification Deficiencies in Welds in Main Control Panels."
(2) Memorandum dated August 25, 1982 Eisenhut to Novak and Lainas, "Board Notification 82-90."

The enclosed IE Information Notice 82-34, Rev. 1 clarifies the time period during which the weld deficiencies mentioned in Reference 1 may have existed and deletes several plants that were identified in the original Information Notice. Due to these deletions, our recommendations for Board notification are modified.

Of the plants mentioned in Reference 1, Marble Hill 1 and 2 and Clinton are deleted from the revised Information Notice. Of the plants mentioned in Reference 2, Clinton should be deleted.

Edward L. Jordan, Director
Division of Engineering and
Quality Assurance
Office of Inspection and Enforcement

Enclosure: As stated

cc: R. C. DeYoung, IE
J. H. Sniezek, IE
M. Williams, NRR
R. Baer, IE
M. S. Wegner, IE
Regional Administrators

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D. C. 20555

September 17, 1982

IE INFORMATION NOTICE NO. 82-34, REV 1: WELDS IN MAIN CONTROL PANELS

Addressees:

All holders of a nuclear power reactor operating license (OL) or construction permit (CP).

Purpose:

This revision is made to provide the specific time period during which the potentially significant problem pertaining to welds in main control panels may have existed. The panels of concern were supplied to a number of operating plants and construction sites by Systems Control of Iron Mountain, Michigan prior to March 1980; Reliance Electric of Stone Mountain, Georgia prior to March 1982; and Comsip of Linden, New Jersey prior to March 1982. Only those panels manufactured prior to these dates are now included in the list of sites which may have panels with defective welds. The potential safety significance of this problem is still under review by the Nuclear Regulatory Commission (NRC) staff. If NRC evaluation so indicates, further licensee action may be requested. In the interim, the staff expects licensees to review the information herein for applicability to their facilities. No specific action or response is required at this time. R1

Description of Circumstances:

Inspections at the vendors' facilities conducted in March of 1980 (Systems Control) and March of 1982 (Reliance and Comsip) disclosed numerous welding practices not in accordance with the American Welding Society (AWS) Standards and several quality assurance practices not in compliance with the vendors' procedures or NRC requirements. Among these were the following: R1

1. Certified material test reports not obtained, not available, or not in accordance with AWS specifications R1
2. Changes to drawings not properly reviewed and accepted
3. Welding being done by unqualified individuals without qualified procedures and using uncalibrated equipment
4. Poor welds, including lack of fusion, undercuts in excess of 1/32", and weld wire remnants from 1/2" to 4" in accepted welds
5. Welding procedure qualification and welder qualification testing required by AWS Standards not accomplished
6. Essential variables as specified by AWS Standards violated
7. Management oversight not accomplished for lengthy periods; lack of separate review and approval for Quality Assurance
8. Unidentified weld filler metal used
9. Gas tungsten arc welding (GTAW) process used but not documented in place of required gas metal arc welding (GMAW) or shielded metal arc welding (SMAW) processes

LIST OF RECENTLY ISSUED IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
82-37	Cracking in the Upper Shell to Transition Cone Girth Weld of a Steam Generator at an Operating Pressurized Water Reactor	9/16/82	All power reactor facilities holding an OL or CP
82-36	Respirator Users Warning for Certain 5-Minute Emergency Escape Self-Contained Apparatus	9/2/82	All power reactor facilities holding an OL or CP, fuel facilities and Priority I material licensees
82-35	Failure of Three Check Valves on High Pressure Injection Lines to Pass Flow	8/25/82	All power reactor facilities holding an OL or CP
82-34	Welds in Main Control Panels	8/25/82	All power reactor facilities holding an OL or CP
82-33	Control of Radiation Levels in Unrestricted Areas Adjacent to Brachytherapy Patients	8/20/82	All Medical Institutions
82-32	Contamination of Reactor Coolant System by Organic Cleaning Solvents	8/19/82	All power reactor facilities holding an OL or CP
82-31	Overexposure of Diver During Work in Fuel Storage Pool	7/28/82	All power reactor facilities holding an OL or CP
82-30	Loss of Thermal Sleeves in Reactor Coolant System Piping at Certain Westinghouse PWR Power Plants	7/26/82	All power reactor facilities holding an OL or CP and applicants for operating license (NTOL)
82-29	Control Rod Drive (CRD) Guide Tube Support Pin Failures at Westinghouse PWRS	7/23/82	All power reactor facilities holding an OL or CP Westinghouse-designed NSSS

OL = Operating License
CP = Construction Permit

Since the inspection determined that the non-conforming practices of all three vendors were similar and widespread at each manufacturing facility, it can be assumed that any panel furnished by these vendors prior to the respective NRC inspection dates may have defective welds. Although the vendors have seismically qualified similar panels, improper welding practices and defective welds prior to the NRC inspection may affect the validity of those qualifications. R1 R1 R1 R1 R1

Some control panels were identified during vendor inspections as having defective welds. Sites which have received panels that may have defective welds are as follows: Palo Verde 1, 2, and 3; Byron 1 and 2; Braidwood 1 and 2; Midland 1 and 2; Vogtle 1 and 2; Callaway 1; Comanche Peak 1 and 2; Waterford 3; Wolf Creek; Brunswick 1 and 2; Seabrook; Susquehanna; Three Mile Island 1; Salem 1 and 2; Hope Creek; Monticello; Perry 1 and 2; Hatch 1 and 2; Indian Point 2; Shearon Harris 1, 2, 3, and 4; St. Lucie 2; Shoreham; Virgil Summer; Dresden; and LaSalle. R1 R1 R1 R1 R1

If you have any questions regarding this matter, please contact the administrator of the appropriate Regional Office or this office.

Edward L. Jordan, Director
Division of Engineering and
Quality Assurance
Office of Inspection and Enforcement

Technical Contact: M. S. Wegner
301-492-4511

Attachment:
List of Recently Issued IE Information Notices

October 6, 1982
1:30 p.m.

MEMORANDUM OF TELECON

SUBJECT: ALLEGED WELDING RELATED DEFICIENCIES AT SAN ONOFRE

TELECON PARTICIPANTS: D. F. KIRSCH, Region V, and E. Earl KENT (Alleger)

ADDRESS OF ALLEGER:

Home Phone:

Concerns expressed by alleger, in addition to those expressed in NRC Inspection Report 50-361/82-27, paragraph 6, are:

1. Pipe fitters used pipe cutters to place scribe marks for socket weld fitup measurements. Alleger stated that the pipe cutter caused deep grooves in both stainless and carbon steel pipes about 1" back from the weld area. The concern is that these grooves cause stress risers. He stated that these conditions exist all over Units 2 and 3 socket welds.

   Action

   a. Establish code requirements (source and criteria) for this condition.

   b. Tour plant areas containing NSR equipment and examine several socket welds to establish allegation credibility and establish compliance with code.

   c. Determine BPC criteria used to fitup socket welds and establish whether this criteria conforms to code requirements.

   d. If any pipes are scribed as described, establish degree of code and procedure compliance.

2. Bechtel designers only use fillet welds on web-to-web connections of beams in pipe supports and tray hangers and do not weld "all around" to restrain forces in all directions. Alleger feels this is code violation.

   Action

   a. Determine ASME (NF) requirements for welding of pipe supports and AWS requirements for welding structural steel.

K/2
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b. Review sample of pipe support and tray hanger drawings to establish degree of conformance with code requirements.

3. The alleger stated that the ASME requires adequate root penetration of fillet welds and states that vendor supplied material did not always conform to this requirement. He could not provide specifics as to vendor and location in the plant, but stated that the only way to check this would be to cut out some fillet welded sections and examine them.

Action

Due to the nonspecific nature of the allegation with regard to supplier or plant location, no action is necessary. Manpower availability is too critical to perform these investigations in view of the absence of specific information.

4. The alleger stated that a ~~spacer~~ was placed between a Unit 1 "Hydrogen line on trip for steam generator." This was done because the hydrogen line had worn thin due to rubbing with another line. Alleger stated that maintenance people at site during the period when damage due to the Unit 1 Diesel Generator fire was being corrected would remember and be able to locate the design change and spacer. The alleger could not provide any location specifics and could only state that no equipment was in the vicinity. He could not remember if this location was in a room containing nuclear safety-related equipment.

Action

Resident Inspector has been notified and will research spacer installation to hydrogen lines during this period.

5. The alleger complained about several instances that he believed to be Code (ASME and AWS) errors and inconsistencies. He was informed that the NRC only enforces licensee commitments to the code and does not write the code.

Action

None.

6. Alleger provided details on end return requirements and stated that end returns are not specified on BPC detail drawings in violation of AWS-D1.1, Section 8, paragraphs 8.8.6, 8.8.6.1, and 8.8.6.2. He stated that these conditions exist on details in any structural application and that a two page BPC table establishes that certain pipe supports must conform to AWS-D1.1 requirements.

6. Licensee Actions to Resolve Allegation

During the course of the inspection the licensee notified the inspector that on September 7, 1982, certain allegations had been received by SCE regarding welding adecuacy at SONGS 2 and 3. The alleger had been previously employed at SONGS by Bechtel Power Corporation. The allegers concerns were:

- Allegation 1: The welding requirements of AWS D1.1 regarding "end returns" were not being complied with on pipe hangers, electrical struts and structural steel. In addition, it was alleged that "end return" requirements were not shown on design/ detail drawings.

- Allegation 2: A spacer plate was believed, by the alleger, to be missing on the upper inside door hinge of the Unit 2 containment personnel hatch.

- Allegation 3: The alleger believed that Bechtel had misinterpreted the ASME Section III welding standards regarding socket weld engagement length without initiating a code case and obtaining appropriate code relief.

- Allegation 4: Based upon numerous spelling errors in nondestructive testing reports, the alleger believed that the quality of non-destructive examinations performed by Peabody Testing personnel may be questionable. (The concern here appears to center on the qualifications and capabilities of testing personnel if those personnel make frequent spelling errors.)

The inspector reviewed the licensee's actions to resolve these allegations by discussions with licensee personnel and examination of documentation.

The licensee appeared to have taken comprehensive investigative action and adequately addressed all issues. The licensee's investigation did not substantiate any allegation.

This item is considered closed.

7. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on September 17, 1982 and discussed the inspection scope and findings.

Action

Review in detail SCE actions to resolve this concern and perform independent verifications as necessary to establish substance or no substance to the weld "end return" allegation.

7. Regarding the allegations addressed in NRC Inspection Report 50-361/82-27, paragraph 6:

a. Allegation 1

The topic of end returns is addressed in Item 6, above.

b. Allegation 2

Examine the Unit 2 containment upper inside door hinge and the associated design drawing to establish whether a spacer plate was required and/or weld fitup criteria compliance. Review licensee's action to resolve this allegation and determine the degree of compliance with code and QA program requirements.

c. Allegation 3

(1) Determine Code/AWS criteria for socket weld engagement length.

(2) Determine Bechtel criteria for engagement length and verification of engagement. Compare this to code criteria to establish compliance.

(3) Resolve any inconsistencies.

(4) Review SCE investigative action to establish validity of licensee's conclusion.

d. Allegation 4

This allegation is considered trivial in nature and, therefore, not worthy of manpower expenditure.

D. F. Kirsch, Chief
Reactor Projects Section No. 3

cc: P. Joukoff
P. Stewart
J. Hanchett
J. Eckhardt

October 6, 1982
11:20 a.m.

MEMORANDUM OF TELECON

SUBJECT: ALLEGED WELDING RELATED DEFICIENCIES AT SAN ONOFRE

TELECON PARTICIPANTS: John O'DELL (L. A. Times Investigative Reporter) and D. F. KIRSCH, Region V

John O'DELL's telephone number is [(714) 493-8474] not confid.

1. Mr. O'DELL related that certain allegations regarding welding practice had been relayed to him by an alleger on about September 27, 1982. Mr. O'DELL relayed the alleger's work experience and history. Mr. O'DELL would not reveal the alleger's name.

2. Based upon the allegation topics relayed by Mr. O'DELL, I felt that I knew the alleger's name and concerns.

3. I relayed who I believed to be the alleger's name to Mr. O'DELL, who confirmed that this individual was the alleger. The alleger's name is E. Earl KENT. Mr. O'DELL would not give me the alleger's telephone number but relayed that he would ask the alleger to contact either myself or Phil JOUKOFF. Our telephone numbers were provided to Mr. O'DELL.

4. The allegations relayed by Mr. O'DELL were the subject of a licensee investigation of concerns brought to their attention by the alleger on September 7, 1982. The licensee informed the inspector of the allegations, their investigative actions, and conclusions during an inspection conducted during the week of September 13, 1982. The allegations and NRC findings are documented in NRC Inspection Report 50-361/82-27, paragraph 6, herewith attached.

5. Mr. O'DELL was informed of this report, the allegation specifics, and certain knowledge of the licensee's investigation conclusions by myself.

6. Mr. O'DELL could not provide any other specific allegations and stated that he had not yet transcribed about 1.5 hours of interview tape.

7. Mr. O'DELL stated that if he decided to publish this story, he would contact the NRC.

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8. Because SCE had conducted a detailed investigative action, I referred Mr. O'DELL to Don SCHONE, Unit 2/3 QA/QC Supervisor for more information.

D. F. Kirsch, Chief
Reactor Projects Section No. 3

cc: P. Joukoff
J. Eckhardt
P. Stewart
J. Hanchett