UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

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| In the Matter of | ) | |
| PACIFIC GAS AND ELECTRIC COMPANY | ) | Docket Nos. 50-275<br>50-323 |
| (Diablo Canyon Nuclear Power Plant, Units 1 and 2) | ) | (Construction Quality Assurance) |

AFFIDAVIT OF D.A. Rockwell, L.R. Wilson

STATE OF CALIFORNIA )
) ss
COUNTY OF SAN LUIS OBISPO )

The above, being duly sworn, deposes and says:

I, D.A. Rockwell, am Special Projects Engineer for the Pacific Gas and Electric Company at the Diablo Canyon Nuclear Power Plant.

I, L.R. Wilson, am Quality Assurance Director for the H.P. Foley Company at the Diablo Canyon Nuclear Power Plant.

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PDR ADOCK 05000275
Q PDR

JI #105 and 106, Motion at 30-31.

It is alleged that:

> According to a QC inspector still on-site, contractor H.P. Foley did not consistently purchase the right parts. To illustrate, Foley used a "one six (sic) fits all" approach for beam clamps that hold up electrical cable trays to help (sic) power instrumentation, the control room, lighting and other critical functions. The problem is that one size does not fit all; there are two types of beams, and Foley should have purchased two types of clamps. (citing 1/16/84, Anon. Aff. at 6.)
>
> Purchasing the wrong beam clamps was not just a technical QA violation; the wrong size does not stay securely in place. A Foley manager told the inspector that "a lot of the beam clamps could be kicked completely off." As of January 1984 the inspector confirmed visually "a large number of beam clamps that were cockeyed and appeared loose." The inspector concluded that at best the clamps are of indeterminate quality, and "many of them are probably affirmatively unsafe." (citing 1/16/84, Anon. Aff. at 6-7.)

1. The allegation that two types of beam clamps were available for two types of beams is false. The manufacturer's catalogue does not list separate clamps for different types of beams. One type of clamp was specified and was used for all installations. H.P. Foley (Foley) purchased the beam clamps as specified by PGandE (PGandE design drawing 050030), and used the appropriate parts for attaching unistrut members to beam flanges.

2. The PGandE design drawing specifies the unistrut channel to be attached under the beam flange. Beam clamps are a standard raceway support component. They are used to attach another standard raceway support component known as unistrut, superstrut, or other brand names, to

structural beams. These components in the assembled configuration are shown in the attached Exhibit 1. These structural systems are relatively lightly loaded so that the clamps have minimal support loads.

3. The design of the beam clamp is such that it may be used with any beam providing the toe of the clamp contacts the beam. The integrity of this connection is established by the friction joint created by the force exerted by the U-bolt on the line contact areas at the toes of the clamp. Since this contact is provided by the plate of the clamp to the unistrut, the plate is not necessarily horizontal and may appear "cockeyed." However, the angle is not important since it is the line contact areas which assure the adequacy of the connection.

4. The beam clamps are held in place by the tension on the U-bolt nuts tightened to specification. However, if one deliberately kicked or hammered a clamp, as alleged, the clamp could lose contact with the beam flange. This does not mean the wrong type of clamp has been installed or the right type of clamp has been installed improperly. It simply means that someone could deliberately kick or hammer a properly installed clamp loose or off.

5. As a result of the recent seismic verification program, certain beam clamps associated with Class I raceway supports were strengthened. For support type S221, the U-bolts were torqued and the U-bolt nuts tack welded. For other support types, the unistrut channel was directly welded to the beam flange. This modification effectively replaced the friction connection with a mechanical connection.

6. Additionally, welding of beam clamps was required for a certain support type by the original design specification. This welding was performed during original installation. However, the current design, as a result of the recent seismic re-evaluation, does not take credit for additional strength provided by the welds in meeting seismic design criteria.

7. The allegation that welding of beam clamps was performed without a qualified procedure is without substance. The joint configuration is controlled by Foley approved welding procedures, WPS-10 and 42. WPS-10 and 42 are acceptable welding procedures for these components as they achieve acceptable weld quality and strength. The clamp material is A575 which meets the chemical analysis requirements of AISI 151 grade 1008, 1010, or 1012. These materials, have the strength, chemical analysis, and weldability characteristics which are required to achieve acceptable welds with WPS 10 and 42. The welding engineer has approved the use of this material in accordance with the authority granted by AWS D1.1. PGandE has reviewed and approved the WPSs for completion of these weldments. Thus the allegation is incorrect. The weldment was completed using appoved procedures that meet code and specification requirements. In accordance with the Foley QC program, only qualified welders were authorized to perform these welding processes.

8. All beam clamps installed prior to 1978 have been reinspected and proper installation verified. Engineering has verified that all class I raceway supports meet the design criteria. This verification included walkdowns to establish as-built condition as required.

9. Contrary to the allegation, the beam clamps meet their design requirements and are installed to approved procedures.

JI #107, Motion at 31.

It is alleged that:

> In early 1983 Foley sacrificed material traceability for Incore Thermocouples, which monitor the temperature inside the reactor core. The Thermocouples were installed in rush fashion on Sundays without QA Procedures such as material traceability, because PGandE needed them completed to pass an NRC licensing requirement. (citing 1/16/84 Anon. Aff. at 6.)

1. Contrary to the allegation, required material traceability was not sacrificed in the upgrade of the incore thermocouples. There were two items that were not purchased as Class I material: material used to fabricate certain junction boxes, and incore thermocouple extension cable from the reactor head to the new cold reference junction box mounted on the crane wall.

2. PGandE Specification 8802 does not require conduit or junction boxes to be traceable by lot or heat number. The material used in the fabrication of the junction boxes was documented by H. P. Foley. The junction boxes were evaluated by PGandE Engineering and determined to meet all design requirements for their intended service. The junction boxes and the entire conduit system were installed, inspected and documented to Class I standards.

3. The thermocouple extension cable was pulled, terminated, inspected, and documented in accordance with Class I procedures. The existing cable was shown to be acceptable by analysis, is traceable to the original purchase order, and meets licensing criteria.

4. Contrary to the allegation, the upgrading of the incore thermocouple system was not accomplished "in a rush fashion on Sundays" without QA procedures, but rather was accomplished on a schedule, which included seven day work weeks, to meet PGandE's time commitment to the NRC. Quality Control inspectors were assigned in sufficient numbers to inspect the installation and provide the required documentation.

JI #108, Motion at 31.

It is alleged that:

> Foley circumvented QA requirements by misclassifying the in-core thermocouples to exempt the hardware from Class I safety requirements. This is unacceptable, since they perform a critical, safety-related function. In the event of an accident, it is essential to know how much the inside of the Reactor Core has heated up. (citing 1/16/84, Anon. Aff. at 5-6.)

1. The statement in the motion is false and does not appear in the cited affidavit. Contrary to the allegation, Foley did not circumvent the QA requirements. All work done on the incore thermocouple system upgrade was inspected and documented in accordance with appropriate Class I design quality requirements.

JI #109, Motion at 31.

It is alleged that:

> One of Foley's managers told his superiors about the problem. In response, he was led to believe that he had a choice of keeping quiet or losing his job. (citing 1/16/84, Anon. Aff. at 6.)

1. This statement and the supporting reference is not true. During the incore thermocouple work a problem was discovered with how some of the materials were purchased. This discovery by the Foley electrical engineer was discussed with Foley Quality Control inspector, Mr. Dennis High. A nonconformance report (NCR) was prepared by Mr. High at the request of the electrical engineer on February 18, 1982. The NCR (HPF No. 8802-683) fully described the problem and corrective action in accordance with the Foley quality program.

2. As set forth in the affidavits of Mr. Knowles and Mr. Dunnum, the allegation is absolutely false. Mr. Knowles, a staff electrical engineer for Foley, discovered the problem. In turn, he informed PGandE through an Engineering Disposition Request; a Foley QC Inspector; Mr. Dennis High, and the Foley QA/QC Manager, Mr. Virgil Tennyson. An NCR (NCR #8802-683) was prepared by Foley and the problem was resolved. As set forth in the attached affidavits, everyone knew of the problem and those who discovered it and brought it to management's attention were not threatened in any manner. To charge that anyone, those involved or some unknown other person, was threatened simply belies the facts. (See affidavits of Mr. R.T. Knowles and D.G. Dunnum, Jr. attached as Exhibits 2 and 3, respectively.)

DATED: March 18, 1984

D.A. ROCKWELL

L.R. WILSON

Subscribed and sworn to
before me this 18th day
of March, 1984

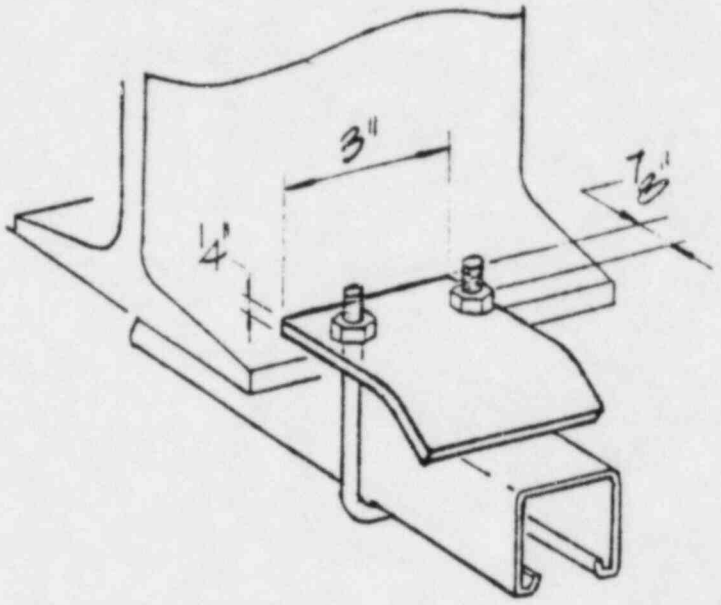
OFFICIAL SEAL
WENDY SPROUL
NOTARY PUBLIC - CALIFORNIA
SAN LUIS OBISPO COUNTY
My comm. expires JUN 30, 1986

Wendy Sproul
Notary Public in and for the
County of San Luis Obispo,
State of California.
My commission expires
June 30, 1986

Exhibits

1. Beam Clamp Detail
2. Affidavit of Mr. R.T. Knowles
3. Affidavit of Mr. D.G. Dunnum, Jr.

EXHIBIT NO. 1




# BEAM CLAMP DETAIL

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|---|---|---|---|
| Foley ELECTRICAL CONTRACTORS | SUBJECT | DRAWN | SCALE: None |
| | | DATE: 3-15-84 | SKETCH NO. |