UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

AFFIDAVIT OF M. TRESLER, F.C. BREISMEISTER, R.D. KERR AND C.H. NICHOLS

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

The above, being duly sworn, depose and say:

I, M.R. Tresler, am Assistant to the Unit 1 Project Engineer on the Diablo Canyon Project. I am an employee of Pacific Gas and Electric Company.

I, F.C. Breismeister, am Manager of the Research and Engineering/ Materials and Quality Services Department, San Francisco Office, for the Bechtel Group.

I, R.D. Kerr, am Senior Welding Engineer for the Pacific Gas and Electric Company.

I, C.H. Nichols, am Engineering Group Leader in the Unit 1 piping group on the Diablo Canyon Project. I am an employee of the Bechtel Power Corp.

JI #192, Supplemental Motion at 11.

It is alleged that:

> PGandE may have received large quantities of stainless steel that are out of compliance with the relevent codes, due to a December 9, 1983 purchase order specifying that materials received for use at Diablo must have a minimum carbon content of .04. (citing 1/23/84, Anon. Aff. at 7-8 and related Exhibit 8.) This specification should have limited carbon content to a maximum of .04. (citing 1/23/84, Anon. Aff. at 7.) The vendor had an incentive to take advantage of this error, because high-carbon stainless steel is cheaper to manufacture than low-carbon stainless. (citing 1/23/84, Anon. Aff. at 8 and transcript of 1/5/84 meeting with NRC inspectors at 48-51.)

1. The allegation is false. All of the stainless steel material is in compliance with code and specification requirements. It is true that certain stainlesss steel piping was purchased with a 0.04% minimum carbon content, but this material also had a 0.08% maximum carbon content requirement. A review of Pullman procurement records issued in early December 1983, the time frame of interest, has identified three purchase orders for A403 Grade 304 or A182 Grade F304 stainless steel pipe fittings. These purchase orders require that the material not only meet the chemical analysis requirements for Type 304 but also have a minimum carbon content of 0.04%. These requirements are stated in PGandE Piping Specification 8711 and are properly implemented by the Pullman purchase orders.

2. The requirement to control minimum carbon content of these stainless materials was included in PGandE Specification 8711 to implement the requirements of the Nuclear Steam System Supplier. These are included in Westinghouse Engineering Specification 677129, Revision 1, dated June 4, 1969.

3. It is obvious that placing additional procurement requirements, more restrictive then industry standards, will not reduce costs.

JI #193, Supplement Motion at 11.

It is alleged that:

> The safety significance of using high-carbon stainless steel in welded applications is that it increases the likelihood that carbide precipitation will cause the welded joint to lose its corrosion resistance and not last as long as the requirements referenced in the Final Safety Analysis Report. (citing 1/23/84, Anon. Aff. at 8) The witness who raised this issue stated that this problem had occurred at the San Onofre plant, and all of the high-carbon stainless steel had to be replaced after only a few years of service because of extensive corrosion. (citing transcript of 1/5/84, meeting with NRC inspectors at 52.)

1. The allegation is incorrect in referring to the steels used as high carbon (H) stainless steels. The stainless steel used has been the normal grade, neither high (H) nor low (L) grade. For the nuclear system piping, the principal steels used have been Types 304, 316, and the casting equivalents, CF8 and CF8M. Grades such as 304 H have not been used for piping.

2. The concern for carbide precipitation has been misplaced because the associated loss of corrosion resistance needs to be considered in the context of the service environment. For example, the reactor coolant system environment in PWR plants like Diablo Canyon is significantly different than the oxygenated water conditions which have caused concern for BWR recirculation piping. The PWR reactor coolant conditions are

not aggressive to the fabricated stainless steels which have been used at Diablo Canyon. Additionally, the welding of the nuclear system piping has been appropriately controlled to minimize any reduction in corrosion resistance. These welding controls included control of weld heat input and the use of low interpass temperatures. Thus, the use of 304, and 316 piping, and the cast equivalent stainless steels is not a concern. There are some systems at Diablo Canyon which do require increased corrosion resistance. In these systems, appropriate corrosion resistant material has been specified and is used.

3. The allegation is false regarding the removal of all high carbon stainless steel at San Onofre. There was no high carbon stainless steel pipe at San Onofre. But stainless steel with carbon content greater than .04% was used. There have been a few cases of 304 stainless steel piping leakage at San Onofre Unit 1. These have been analyzed and appropriate actions have been taken. These few failures have been attributed to special localized environmental conditions external to the pipe. A small amount of pipe has been replaced. There are thousands of feet of the originally installed grade 304 stainless piping. This piping has not cracked or leaked and is acceptable. There is no plan to replace this piping.

4. An ultrasonic and dye penetrant testing program designed to detect stress corrosion cracks is in place at Diablo Canyon. This program is applied in accordance with ASME Section XI. No corrosion cracking of piping has been found in Diablo Canyon piping.

The inspection program is repeated during each Plant refueling operation. Therefore, should any degradation of weld quality begin, it will be detected before impacting plant safety.

JI #194, Supplemental Motion at 11.

It is alleged that:

> To date management has not responded to internal protest of the error reversing maximum and minimum requirements for the amount of carbon in stainless steel. (citing 1/23/84, Anon. Aff. at 8.) The time log (sic) would be understandable, except that PGandE claims the plant is ready to operate.

1. PGandE is not aware of the anonymous affiant's internal protest, and must assume the protest is also anonymous. However, since the concerns stem from lack of understanding of

   A. material specifications,

   B. welding process control benefits,

   C. corrosion environments where these materials are used,

   D. false information regarding San Onofre stainless steel piping replacement,

it would be understandable that the concern has not escalated to management's attention.

Dated: March 19, 1984

M. TRESLER

F.C. BREISMEISTER

R.D. KERR

C.H. NICHOLS

Subscribed and sworn to
before me this 19th day
of March, 1984

Ida Dutra
Notary Public in and for the
County of San Luis Obispo
State of California.
My commission expires
January 2, 1987

OFFICIAL SEAL
IDA DUTRA
NOTARY PUBLIC - CALIFORNIA
SAN LUIS OBISPO COUNTY
My comm. expires JAN 2, 1987