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50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Ga 05000323
AUTH.NAME AUTHOR AFFILIATION
SHIFFER,J.D. Pacific Gas & Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
KNIGHTON,G.W. Licensing Branch 3

SUBJECT: Forwards responses to Allegations 1513,1514 & 1515 re fire, protection & Rev 1 to Procedure STP M-71, "Surveillance Test Procedure Fire Water Sys Flow Test."

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PG&E — 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

February 22, 1985

PGandE Letter No.: DCL-85-075

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323
Diablo Canyon Units 1 and 2
Response to Allegations #1513, #1514, and #1515

Dear Mr. Knighton:

Enclosed are PGandE's responses to the subject allegations. PGandE believes that this response resolves the allegations for both Units 1 and 2.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

Enclosure

cc: R. T. Dodds
G. W. Knighton
H. E. Schierling
Service List

B021
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ENCLOSURE

NRC Allegation 1513

It is alleged that:

The most significant problem concerning NFPA Standards is the lack of any fire flow tests, to my knowledge. These tests involve opening up a hydrant all the way and measuring the flow rate with a hand held meter. This is the standard test method used by municipal fire departments to test hydrants, and is required for acceptance of any new construction. (11/1/84 Thompson Affidavit at page 16, Item 29.)

1. The allegation incorrectly states that there is a lack of any fire flow tests. Fire water protection system flow tests are conducted at Diablo Canyon as part of system acceptance testing and as a normal part of Technical Specification surveillance testing, per Technical Specification 4.7.9.1, "Plant Systems Surveillance Requirements" is applicable.

2. NFPA 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances," Section 2-2.2 (1983) states "Adequacy of water supply shall be determined by flow test or other reliable means." DCP Surveillance Test Procedure (STP) M-71 (attached) accomplishes this. It establishes how flow tests within the plant yard loop will be conducted to measure the pressure and flow available to the plant fire suppression systems from the raw water reservoir. These test results are compared with baseline data to determine 'operability.' Any significant difference between the test results and the baseline data would represent an impairment to the water supply which would then be resolved. Although no specific requirements exist in the NFPA Standard for the flow test, the flow tests at Diablo Canyon meet the guidelines of the NFPA Fire Protection Handbook, 14th edition, and NFPA 13-1983, Section B-2-1.

NRC Allegation 1514

It is alleged that:

Since my departure from Diablo Canyon, I have continued to research certain NFPA concerns, and according to S.L.O. County Standards, there is not enough fire water storage if there is an earthquake that would damage the municipal supply. An NRC Resident Inspector told me that each unit has about 185,000 gallons, which is enough storage for an average industrial or commercial project. It would be only a few drops in the size bucket necessary for a nuclear plant. In my opinion, it is not an adequate defense to say that Diablo could rely on municipal lines for additional water. Diablo Canyon is the last customer on a long fragile waterline that extends all the way to the water treatment plant near Lake Lopez. This waterline would be very vulnerable to seismic activity (earthquake). As NFPA section A-2-3.1.1. (Exhibit 10) states:

> 'Reliability of public water supply should take into account probable minimum pressure condition prevailing during such periods as at nights or during summer months when heavy usage may occur, also possibility of interruption by flood, or ice conditions in winter.'

(11/1/84 Thompson Affidavit at page 16, Item 30)

1. The allegation incorrectly states that the fire water protection system is connected to the municipal supply. Diablo Canyon does not rely on the availability of a municipal fire water supply nor is the system connected to such a supply in any way.

2. The Diablo Canyon fire protection water supply is described and accepted by the NRC in the Safety Evaluation Report (Supplement 8, page 9-7, dated November 15, 1978) as follows:

The water fire protection system is common to both units, and consists of a 4.5-million gallon reservoir, a 300,000 gallon fire water tank, a yard loop with sectionalizing isolation valves, and two electric motor-driven pumps having a design capacity of 1500 gmp and 290-foot head that automatically start in sequence when the pressure in the fire water system drops to 75 psig. The 4.5 million gallon

reservoir is the primary means of pressurizing the fire water system by hydrostatic pressure. The two electric fire pumps, which are seismic Category I, and powered from Class 1E buses, provide the backup capability for pressurizing the fire water system.

3. The 300,000 gallon fire water tank, the two 1500 gpm fire pumps, and the associated distribution piping have been seismically qualified and would become the primary fire water supply in the event the 4.5 million gallon reservoir or its distribution piping were damaged in a severe seismic event. This supply exceeds the NRC guidelines (2-75 gpm hose streams), which are contained in the current Standard Review Plan (SRP) 9.5.1 Position C.6.c(4) (Revision 2). In addition to the above water supplies, Diablo Canyon also has 3-250 gpm seismically-qualified portable fire pumps capable of connecting the fire water system (via portable hose) to the raw water reservoir, the condenser hotwells, and the ocean (via the auxiliary saltwater system).

NRC Allegation 1515

It is alleged that:

I also question whether the pipes in the firewater protection system have been designed for the proper flow capacity. At Intake Structure, for example, the piping is designed to carry 150 gallons per minute, from three hose reels each at 50 gallons per minute. NFPA says that the flow rate for a commercial structure should be a minimum of 1000 gallons per minute. (Relevant portions of the NFPA standards are enclosed as Exhibit 11.) (11/1/84 Thompson Affidavit at page 17, Item 31).

1. This allegation incorrectly describes the fire water protection system at the intake structure and its design capacity. The design capacity of the fire protection system to the intake structure is 1000 gpm, and is distributed between eight hose stations and two hydrants (not three hose reels).

Firewater protection for the intake structure consists of the following:

a. The 6-inch underground supply main is connected to the plant yard loop and the raw water reservoir gravity feed. It is capable of delivering 1000 gpm at the required pressure (65 psi) to the hose stations and the hydrants.

b. Two hydrants near the intake structure, supplied by the 6-8nch underground main.

c. Four 1-1/2-inch hose stations inside the intake structure near the four circulating water pumps. These hose stations are supplied by individual 2-inch standpipes. All common supply piping is 4-inch size or larger, capable of delivering in excess of 300 gpm total to the 4 hose stations (75 gpm each at 65 psi residual pressure). The 4-inch line is in turn fed by a 6-inch underground supply.

d. Four 1-1/2-inch hose stations on the operating deck on top of the intake structure, supplied by the 6-inch underground main (75 gpm each at 65 psi residual pressure).

2. NFPA 14 (1983) "Standard for Installation of Standpipe and Hose Systems Table," and Section 2-1.1 specify pipe size used to supply hose stations in the intake structure. For a total accumulated flow up to 500 gpm, 4-inch nominal pipe size is specified in the table. While the necessary total accumulated flow to the hose stations inside the intake structure is only 300 gpm, 4-inch piping has been utilized.

3. The 1000 gpm minimum design basis flow rate mentioned in the Allegation with the NFPA 13, "Standard for Installation of Sprinkler System" (Exhibit 11 to allegation) is not appropriate. Exhibit 11 refers to Table A-2-2.1.3 of NFPA 13 (1983) "Minimum Water Supply Requirements for Hydraulically Designed Extra Hazard Sprinkler Systems." There are no sprinkler systems inside the intake structure. The appropriate reference for the hose stations inside the intake structure is NFPA 14 (1983), Section 2-1.3 for Class II Service (1-1/2-inch hose connections), page 14-12 and is as follows:

> 2-1.3 Class II. In standpipe systems for Class II service each standpipe shall be sized for a minimum flow of 100 gpm (379 L/min). Where one or more standpipes are required, all common supply piping shall be sized for a minimum flow of 100 gpm (379 L/min).

Individual standpipes in the intake structure are sized for a minimum flow of 100 gpm; common supply piping is sized for a minimum flow of 300 gpm (75 gpm at 65 psi to each of four hose stations). This design exceeds the requirements of the applicable NFPA standard.

Attachment