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February 21, 1985

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PGandE Letter No.: DCL-85-071

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. 50-³²⁵323-06
Diablo Canyon Unit 2
Internal Review Program - Supplemental Information

Dear Mr. Knighton:

In response to the Staff's requests, enclosed is additional information regarding the Diablo Canyon Unit 2 Internal Review Program (IRP). This information supplements previous discussions in letters dated July 31, 1984 (DCL-84-276); October 19, 1984 (DCL-84-332); November 2, 1984 (DCL-84-344); and December 7, 1984 (DCL-84-378). A summary of this information is provided below.

Enclosure 1 provides a summary of PGandE's resolution of the issues reviewed by the IRP. It provides more detailed information than that provided in Table 4 of DCL-84-332 regarding comparison of Unit 1 and Unit 2 resolutions. In particular, the following specific items have been reviewed:

- Design-related Error and Open Items (EOIs) identified by the Independent Design Verification Program (IDVP), Open Items (OIs) identified by the Internal Technical Program (ITP), and Unit 1 issues discussed in PGandE Phase I and Phase II final reports.
- NRC-identified Open Items and Followup Items documented in SSERs 18, 19, 20, and 24.
- Generic items discussed in IDVP Interim Technical Reports and other verification program-related items (not included as EOIs).

Enclosure 2 provides a discussion of the three items (EOIs 1049, 8014, and 8049) that have different resolutions for Unit 2 than for Unit 1.

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Enclosure 3 provides the status of IRP items that require modifications. A completion schedule for pending modifications is provided, and completed modifications are so noted. PGandE will complete the pending modifications prior to fuel load.

In addition to the enclosed information, the final resolution of the 414 items identified under the IRP can be grouped as follows:

- (a) 57 items required physical modifications
- (b) 73 items required engineering analysis only
- (c) 284 items required no further engineering analysis by the IRP

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

Sincerely,

ORIGINAL SIGNED BY

J. D. Shiffer

Enclosures

cc: R. T. Dodds
J. B. Martin
H. E. Schierling
Service List

ENCLOSURE 1
SUMMARY OF RESOLUTION CATEGORIES
OF ITEMS REVIEWED BY IRP

DESCRIPTION	ENGINEERING ASSESSMENT CATEGORIES ⁽¹⁾					FURTHER ENGINEERING ⁽²⁾ REVIEW REQUIRED				TOTAL ITEMS	
	Note a	Note b	Note c	Note d	Note e	Sub Total	Y	S	N		Sub Total
IDVP EOIs & ITP OIs ⁽³⁾	7	38	19	19	43	126	141	72	3	216	342
SSER OIs & FOLLOW-UP ITEMS ⁽⁴⁾	6	8	0	0	3	17	27	2	0	29	46
OTHER PROGRAM ITEMS ⁽⁵⁾	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>17</u>	<u>7</u>	<u>0</u>	<u>24</u>	<u>26</u>
TOTAL	13	46	21	19	46	145	185	81	3	269	414

Explanation of Notes:

(1) Engineering assessment categories:

- a. Unit 2 is identical to Unit 1 with respect to the subject item and the Unit 1 resolution is equally applicable to Unit 2.
- b. The item applies to a portion of the plant common to both Units 1 and 2, and, therefore, is already resolved by the Unit 1 verification program.
- c. The item applies only to Unit 1.
- d. The item was raised by a Unit 1 IDVP participant and subsequently determined by the IDVP not to be an error or deviation.
- e. Additional Unit 2 reanalyses/reviews already in progress prior to IRP review initiation clearly envelope the area of concern.

ENCLOSURE 1 (Cont'd)
SUMMARY OF RESOLUTION CATEGORIES
OF ITEMS REVIEWED BY IRP

(2) Resolution categories of items requiring further Unit 2 specific engineering review:

Y - Unit 2 resolution is the same as Unit 1.

S - Unit 2 resolution developed as a result of separate Unit 2 review initiated prior to start of IRP.

N - Unit 2 resolution is not the same as Unit 1.

(3) Refer to IRP Final Report, Table 1 (DCL-84-378), for description of IDVP EOIs and ITP OIs.

(4) Refer to IRP Final Report, Table 2 (DCL-84-378), for description of SSER OIs and followup items.

(5) Refer to IRP Final Report, Table 3 (DCL-84-378), for description of other verification program items.

ENCLOSURE 2

DISCUSSION OF IRP ITEMS HAVING UNIT 2 RESOLUTION
DIFFERENT FROM THAT FOR UNIT 1

EOI - 1049 (IRP 2-1049) - MAIN ANNUNCIATOR TYPEWRITER LOCATION

1. CHARACTERIZATION OF FINDING

The use of auxiliary building response spectra to qualify the Unit 1 main annunciator typewriter was challenged. RLCA contended that the control room floor response spectra should have been used. Also, the location of the Unit 2 typewriter and its relationship to Unit 1 safety-related functions were questioned.

2. UNIT 1 RESOLUTION

No corrective action was required for Unit 1 as the Unit 1 review determined that qualifying the typewriter to the auxiliary building spectra was appropriate. The control room floor response spectra was not applicable since the typewriter was mounted on top of a shear wall. The Unit 2 typewriter is not required for Unit 1 operation.

It should be further noted that the Unit 1 typewriter has since been replaced for reasons of reliability with a new typewriter that has been qualified to the latest seismic requirements.

3. UNIT 2 RESOLUTION

The spectra for the Unit 2 typewriter location was reviewed and accelerations were compared with qualification allowables. The Unit 2 typewriter was moved to a location equivalent to Unit 1, where seismic qualification is valid.

It should be further noted that the Unit 2 typewriter has since been replaced with a new more reliable typewriter that has been qualified to the latest seismic requirements.

4. REASON FOR DIFFERING RESOLUTION

The accelerations associated with the location of the Unit 1 annunciator typewriter were consistent with the accelerations of the qualifying response spectra. Therefore, no physical modifications, relocation, or further analysis was required. The accelerations associated with the location of the Unit 2 annunciator exceeded the accelerations of the qualifying response spectra. In order to correct the situation, the Unit 2 typewriter was relocated to a place where the seismic qualification was valid.

EOI - 8014 (IRP PACKAGE 2-8014) - PIPE BREAK PROTECTION FOR AFW CONTROL VALVES

1. CHARACTERIZATION OF FINDING

As a result of observations during an IDVP field inspection, the IDVP claimed that the spray protection shields for four AFW system valves (level control valves) were not properly supported, and the commitment to install shields on two other AFW valves (flow control valves) was not implemented.

2. UNIT 1 RESOLUTION

The IDVP observed unattached rod hangers above the shields of four level control valves (LCVs). These unattached rod hangers belonged to pipe supports for other systems and were not part of the valve shields. The shields were determined to be supported properly.

With respect to the two AFW flow control valves, the Diablo Canyon Project had reevaluated the requirement of jet spray shields for the two flow control valves (FCVs) and determined they were not needed. As a result, shields for these two valves were not installed. The rationale for this conclusion stems from the fact that these valves are used only for long-term backup water supply to the AFW pumps, and are equipped with manual handwheels that can be used if the valve actuators fail.

3. UNIT 2 RESOLUTION

No moderate energy line break spray protection is provided for the subject LCV and FCV valves since redundant AFW supply trains for the LCVs and manual handwheels for the FCVs satisfy plant cooldown requirements.

4. REASON FOR DIFFERING RESOLUTION

The four level control valves (LCVs) on each unit are located in redundant AFW supply trains with sufficient capacity for initial plant cooldown via one steam generator and one AFW pump. The jet impingement analysis on Unit 1 did not take credit for this redundancy as did the Unit 2 analysis. (This Unit 2 analysis is consistent with the current licensing commitment, FSAR Update Section 3.6.5.3.3, page 3.6-20). Consequently, the shields were installed for the Unit 1 valves but not for the Unit 2 valves. The concerns raised regarding shield supports for Unit 2 are not applicable.

In regard to the FCVs, the final resolution between the two units is the same. Jet spray shields are not required to protect AFW flow control valves since the valves can be manually operated via handwheels.

EOI - 8049 (IRP 2-8049) - EFFECTS OF COMPARABLE HIGH ENERGY LINE BREAK IN AFW
SYSTEM LINE 594

1. CHARACTERIZATION OF FINDING

A postulated pipe break in Line 594 of the auxiliary feedwater (AFW) system could impact associated electrical conduits and a postulated single failure could result in loss of AFW flow. SWEC recommended an evaluation be made of this postulated break to assure licensing commitments are met.

2. UNIT 1 RESOLUTION

A detailed examination and reanalysis of the scenario was made to verify that the system is available to perform its intended safety function in a postulated pipe break environment. The evaluation showed that the calculated jet pressure on impacted conduits is below allowables. Therefore, it was concluded that jet impingement resulting from a postulated pipe break in Line 594 will have no adverse effect on the AFW system.

3. UNIT 2 RESOLUTION

Effects of high energy line breaks on safety-related equipment are the subject of a separate Unit 2 overall jet impingement review. No high energy pipe break is postulated in the Unit 2 AFW systems line comparable to the Unit 1 postulated break location.

4. REASON FOR DIFFERING RESOLUTION

Local pipe routing and support locations on Unit 2 are different from Unit 1. High energy line breaks are not postulated at the same locations for Unit 1 as Unit 2. As a result of these differences, a break location similar to that considered for Unit 1 does not exist for Unit 2.

ENCLOSURE 3

STATUS OF UNIT 2 ITEMS REQUIRING MODIFICATIONS
AS IDENTIFIED IN THE IRP FINAL REPORT

Table 1: Unit 2 IRP detailed Resolution Table - ITP OIs and IDVP EOIs.

Table 2: Unit 2 IRP detailed Resolution Table - SSER 20 Open and Followup Items.

Table 3: Unit 2 IRP detailed Resolution Table - Other verification program - related items.

TABLE 1
UNIT 2 IRP - ITP OIs and IDVP EOIs

<u>UNIT 1 OI/EOI NUMBER</u>	<u>UNIT 2 IRP PKG. NUMBER</u>	<u>MODIFICATION STATUS AS OF FEBRUARY 8, 1985</u>	<u>SCHEDULE</u>
3	2-0983	Modifications are pending.	Early March
9	2-1058	Modifications are complete.	N/A
18	2-0018	Some modifications are complete. Pending modifications associated with this item are discussed in IRP packages 2-0983 & 2-1003.	- -
* 19	2-0019	Modifications are complete.	N/A
* 20	2-0020	Modifications are complete.	N/A
24	2-0024	Modifications are pending.	Early March
28	2-0028	Modifications are complete.	N/A
30	2-0030	Modifications are complete.	N/A
32	2-0032	Modifications are complete.	N/A
33	2-1003	Modifications are pending.	Early March
* 34	2-0034	Modifications are complete.	N/A
* 36	2-0036	Modifications are complete.	N/A
38	2-0038	Modifications are pending.	Mid-March
39	2-6002	Some adjustments to gaps will be required.	Early March
* 40	2-0040	Modifications are complete.	N/A
41	2-0041	Modifications are pending and are discussed in IRP package 2-0983.	- -
42	2-0042	Modifications are complete.	N/A
910	2-0983	Modifications are pending.	Early March

* Status change since final IRP Report December 7, 1984

TABLE 1

UNIT 2 IRP - ITP OIs and IDVP EOIs

<u>UNIT 1 OI/EOI NUMBER</u>	<u>UNIT 2 IRP PKG. NUMBER</u>	<u>MODIFICATION STATUS AS OF FEBRUARY 8, 1985</u>	<u>SCHEDULE</u>
949	2-0949	Modifications are complete.	N/A
* 977	2-1014	Modifications are complete.	N/A
983	2-0983	Modifications are pending.	Early March
1003	2-1003	Modifications are pending.	Early March
*1014	2-1014	Modifications are complete.	N/A
*1049	2-1049	Modifications are complete.	N/A
1058	2-1058	Modifications are complete.	N/A
*1069	2-1069	Modifications are complete.	N/A
1077	2-1003	Modifications are pending.	Early March
1088	2-1088	Modifications are pending.	Mid-March
1092	2-0032	Modifications are complete.	N/A
1096	2-1096	Modifications are complete.	N/A
1099	2-1099	Modifications are complete.	N/A
1113	2-1113	Modifications are pending.	Early March
1118	2-1118	Modifications are pending.	Late Feb.
*1135	2-1069	Modifications are complete.	N/A
*3007	2-1014	Modifications are complete.	N/A
*3008	2-1014	Modifications are complete.	N/A
6002	2-6002	Modifications are pending.	Mid-March
7002	2-7002	Modifications are pending.	Late Feb.
8001	2-8001	Modifications are pending.	Mid-March

* Status change since final IRP Report December 7, 1984

TABLE 1

UNIT 2 IRP - ITP OIs and IDVP EOIs

<u>UNIT 1 OI/EOI NUMBER</u>	<u>UNIT 2 IRP PKG. NUMBER</u>	<u>MODIFICATION STATUS AS OF FEBRUARY 8, 1985</u>	<u>SCHEDULE</u>
8002	2-8001	See IRP Package 2-8001.	- -
8003	2-8001	See IRP Package 2-8001.	- -
8004	2-8001	See IRP Package 2-8001.	- -
*8009	2-8009	Modifications and set-point adjustments are complete.	N/A
*8010	2-8010	Modifications are complete.	N/A
8012	2-0030	Modifications are complete.	N/A
8016	2-0030	Modifications are complete.	N/A
*8032	2-8032	Modifications are complete.	N/A
8035	2-8035	Modifications are complete.	N/A
8046	2-8046	Modifications are complete.	N/A
8047	2-8047	Modifications are complete.	N/A
*8062	2-8062	Modifications are complete.	N/A
8063	2-8063	Modifications are complete.	N/A

Note: In addition to the above, EOI-8057 requires a confirmatory walkdown which will be completed by mid-March. EOI-8017 required an administrative procedure change which has been completed.

* Status change since final IRP Report December 7, 1984

TABLE 2

UNIT 2 IRP - SSER 20 OPEN AND FOLLOW-UP ITEMS

<u>OI/FI NUMBER</u>	<u>UNIT 2 IRP PKG. NUMBER</u>	<u>MODIFICATION STATUS AS OF FEBRUARY 8, 1985</u>	<u>SCHEDULE</u>
01-20	2-0034 2-0109 2-1088 2-1113	Modifications are pending.	Mid-March
01-28	2-8047	Modifications are complete.	N/A
01-29	2-7002	Modifications are pending.	Late Feb.
01-30	2-6002	Modifications are pending.	Mid-March
*FI-9	2-0112 2-8009 2-8010 2-8062	Modifications are complete.	N/A
FI-10	2-8001	Modifications are pending.	Mid-March
FI-11	2-8001	Modifications are pending.	Mid-March

* Status change since final IRP Report December 7, 1984

TABLE 3

UNIT 2 IRP - OTHER VERIFICATION PROGRAM-RELATED ITEMS

<u>--</u>	<u>UNIT 2 IRP PKG. NUMBER</u>	<u>MODIFICATION STATUS AS OF FEBRUARY 8, 1985</u>	<u>SCHEDULE</u>
	2-0109	Modifications are pending.	Mid-March
*	2-0112	Modifications are complete.	N/A
*	2-0117	Modifications are complete.	N/A

* Status change since final IRP Report December 7, 1984