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Certified By *James L. Stinson*



MEMORANDUM FOR: Dennis F. Kirsch, Director
Division of Reactor Projects, Region V

FROM: Mark H. Williams, Chief
Trends and Patterns Analysis Branch
Office for Analysis and Evaluation
of Operational Data

SUBJECT: LER QUALITY EVALUATION FOR DIABLO CANYON 1,2

The enclosure to this memorandum contains the analysis by our contractor, DOE/INEL, of the quality of LERs for Diablo Canyon 1,2 for the period from August 1, 1986 to July 31, 1987.

This evaluation provides an overview of the quality of the LERs. It compares a representative sample of the LERs to the reporting requirements of 10 CFR 50.73(b), and the guidelines contained in NUREG-1022 and its Supplements No. 1 and No. 2. However, it does not attempt to make a determination or comment as to whether or not the regulation is met. Rather, it presents specific suggestions to improve the quality of the reports and, in that light, the entire evaluation report should be transmitted to the licensee, with a copy to the manager responsible for preparing LERs. We have received positive comments from licensees on the usefulness of this report and have observed improvements in LER quality.

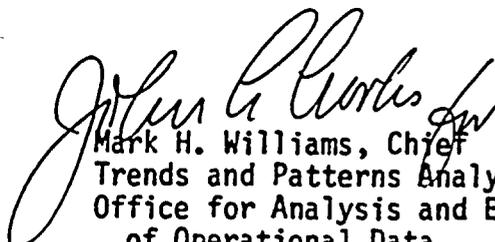
The summary to the report highlights the findings of the evaluation. As indicated, this is the second evaluation of Diablo Canyon 1,2 LERs. In both evaluations, the overall quality of the LERs scored substantially above the industry average. Compared to the first evaluation, the quality of discussions of root cause, corrective actions, and safety system responses has improved. Details of these findings, together with some items for attention, are discussed in the body of the evaluation report.

Since the evaluation is based solely on the information that the licensee includes in its LERs, please notify us if your evaluations indicate that relevant facts on the nature or character of events are frequently missing from the licensee's LERs. We could factor this input into our process. If I can be of further assistance, please contact me on FTS 492-4480.

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Draft copies of the enclosure were forwarded on August 7, 1987 to D. Pereira, Region V, and C. M. Trammell, NRR Project Manager, by Paul Bobe of my office. The enclosed report differs slightly from the draft copy; minor changes were made to pages D-7, D-13, and D-15.


Mark H. Williams, Chief
Trends and Patterns Analysis Branch
Office for Analysis and Evaluation
of Operational Data

Enclosure:
As Stated

cc: D. Pereira, RV (w/encl.)
C. M. Trammell, Project Manager, NRR (w/encl.)
J. Roe, NRR (w/encl.)
C. Miller, INEL (w/o encl.)



LICENSEE EVENT REPORT (LER)
QUALITY EVALUATION FOR
DIABLO CANYON 1,2
DURING THE PERIOD FROM
AUGUST 1 1986 TO JULY 31 1987



SUMMARY

An evaluation of the content and quality of a representative sample of the Licensee Event Reports (LERs) submitted by Diablo Canyon 1,2 during the period from August 1, 1986 to July 31, 1987 was performed. This evaluation provides an overview of the quality of the LERs by comparing their contents to the reporting requirements of 10 CFR 50.73(b) and the guidelines contained in NUREG-1022 and its Supplements Nos. 1 and 2.

This is the second time the Diablo Canyon LERs have been evaluated using this methodology. The results of this evaluation indicate that the overall quality of the Diablo Canyon LERs, for the three areas that are evaluated (i.e., the text, abstract, and coded fields), has remained virtually unchanged from the previous evaluation. The first evaluation's overall average LER score was 9.3, which was well above the industry average (7.8) at that time. For the current evaluation, Diablo Canyon's overall average LER score is again 9.3 but the current industry average has increased to 8.4. The quality of the discussions concerning root cause, corrective actions, and safety system responses has increased since the previous evaluation.

Two deficiencies found in this evaluation concern the requirements to discuss the safety consequences of the event and to adequately identify failed components. The score for the safety consequences decreased somewhat since the previous evaluation. The score for the requirement to identify those components that failed (e.g., by manufacturer and model number) increased slightly from the previous evaluation but is still considered inadequate.



LER QUALITY EVALUATION FOR
DIABLO CANYON 1,2

INTRODUCTION

In order to evaluate the overall quality of the contents of the Licensee Event Reports (LERs) submitted by Diablo Canyon 1,2 during the period from August 1, 1986 to July 31, 1987, a sample of the unit's LERs was evaluated. This evaluation was performed by comparing the contents of each LER to the reporting requirements of 10 CFR 50.73(b) and the guidelines contained in NUREG-1022¹ and its Supplements Nos. 1² and 2.³ The sample consists of a total of 15 LERs, which is considered to be the maximum number of LERs necessary to be evaluated for a unit/station. See Appendix A for a list of the LER numbers in the sample.

This is the second time that the Diablo Canyon LERs have been evaluated using the same methodology. As before, it was necessary to start the evaluation before the end of the assessment period because the input was due such a short time after the end of the assessment period. Therefore, those LERs prepared by the unit late in the assessment period were not available for selection.

METHODOLOGY

The evaluation consists of a detailed review of each selected LER to determine how well the content of its text, abstract, and coded fields meet the criteria of 10 CFR 50.73(b). In addition, each selected LER is compared to the guidance for preparation of LERs presented in NUREG-1022 and Supplements No. 1 and 2 to NUREG-1022; based on this comparison, suggestions were developed for improving the quality of the LERs. The purpose of this evaluation is to provide feedback to improve the quality of LERs. It is not intended to increase the requirements concerning the "content" of these reports beyond the current requirements of 10 CFR 50.73(b). Therefore, statements in this evaluation that suggest



measures be taken are not intended to increase requirements and should be viewed in that light. However, the minimum requirements of the regulation must be met.

The evaluation process for each LER is divided into two parts. The first part of the evaluation consists of documenting comments specific to the content and presentation of each LER. The second part consists of determining a score (0-10 points) for the text, abstract, and coded fields of each LER.

The LER specific comments serve two purposes: (1) they point out what the analysts considered to be the specific deficiencies or observations concerning the information pertaining to the event, and (2) they provide a basis for a count of general deficiencies for the overall sample of LERs that was evaluated. Likewise, the scores serve two purposes: (1) they serve to illustrate in numerical terms how the analysts perceived the content of the information that was presented, and (2) they provide a basis for determining an overall score for each LER. The overall score for each LER is the result of combining the scores for the text, abstract, and coded fields (i.e., $0.6 \times \text{text score} + 0.3 \times \text{abstract score} + 0.1 \times \text{coded fields score} = \text{overall LER score}$).

The results of the LER quality evaluation are divided into two categories: (1) detailed information and (2) summary information. The detailed information, presented in Appendices A through D, consists of LER sample information (Appendix A), a table of the scores for each sample LER (Appendix B), tables of the number of deficiencies and observations for the text, abstract and coded fields (Appendix C), and comment sheets containing narrative statements concerning the contents of each LER (Appendix D). When referring to Appendix D, the reader is cautioned not to try to directly correlate the number of comments on a comment sheet with the LER scores, as the analysts have flexibility to consider the magnitude of a deficiency when assigning scores (e.g., the analysts sometimes make comments relative to a requirement without deducting points for that requirement).



RESULTS

A discussion of the analysts' conclusions concerning LER quality is presented below. These conclusions are based solely on the results of the evaluation of the contents of the LERs selected for review and as such represent the analysts' assessment of the unit's performance (on a scale of 0 to 10) in submitting LERs that meet the criteria of 10 CFR 50.73(b) and the guidance present in NUREG-1022 and its supplements.

Table 1 presents the average scores for the sample of LERs evaluated for the unit. In order to place the scores provided in Table 1 in perspective, the distribution of the overall average score for all units/stations that have been evaluated using the current methodology is provided on Figure 1. Figure 1 is updated each month to reflect any changes in this distribution resulting from the inclusion of data for those units/stations that have not been previously evaluated or those that have been reevaluated. (Note: The previous score for those units/stations that are reevaluated is replaced with the score from the latest evaluation).

Table 2 and Appendix Table B-1 provide a summary of the information that is the basis for the average scores in Table 1. For example, Diablo Canyon 1,2's average score for the text of the LERs that were evaluated is 9.2 out of a possible 10 points. From Table 2 it can be seen that the text score actually results from the review and evaluation of 17 different requirements ranging from the discussion of plant operating conditions prior to the event [10 CFR 50.73(b)(2)(ii)(A)] to text presentation. The resultant percentage scores in the text summary section of Table 2 provide an indication of how well each text requirement was addressed by the unit for the 15 LERs that were evaluated. Based on similar methodology, the percentage scores for the various sections of the abstract and the items in the coded fields were also computed and are shown in Table 2.

As indicated in Table 2, certain requirements or areas within the text, abstract, and coded fields are causing the unit difficulty when preparing LERs. Relatively low percentage scores may indicate that the unit needs additional guidance concerning these requirements, or it may indicate that the unit understands the basic requirement but has either:



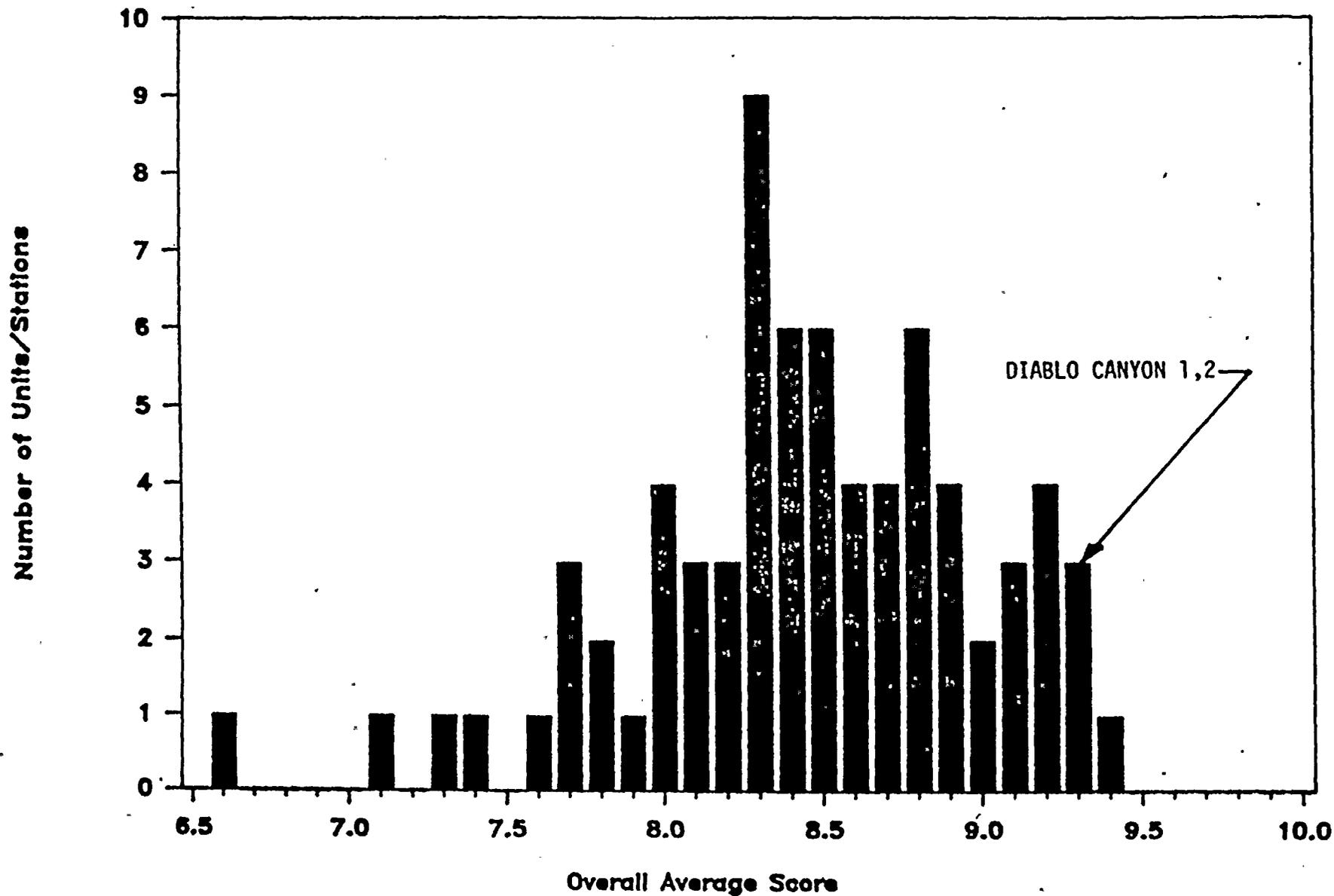
TABLE 1. SUMMARY OF SCORES^a FOR DIABLO CANYON 1,2

	<u>Average</u>	<u>High</u>	<u>Low</u>
Text	9.2	10.0	7.1
Abstract	9.4	9.8	8.3
Coded Fields	9.4	10.0	8.5
Overall	9.3	9.9	8.2

a. See Appendix B for a summary of scores for each LER that was evaluated.



Figure 1. Distribution of LER Scores



5



TABLE 2. LER REQUIREMENT PERCENTAGE SCORES FOR DIABLO CANYON 1,2

TEXT

Requirements [50.73(b)] - Descriptions	Percentage Scores () ^a
(2)(ii)(A) - - Plant condition prior to event	97 (15)
(2)(ii)(B) - - Inoperable equipment that contributed	b
(2)(ii)(C) - - Date(s) and approximate time(s)	93 (15)
(2)(ii)(D) - - Root cause and intermediate cause(s)	97 (15)
(2)(ii)(E) - - Mode, mechanism, and effect	92 (3)
(2)(ii)(F) - - EIIS codes	67 (15)
(2)(ii)(G) - - Secondary function affected	b
(2)(ii)(H) - - Estimate of unavailability	100 (3)
(2)(ii)(I) - - Method of discovery	100 (15)
(2)(ii)(J)(1) - Operator actions affecting course	100 (8)
(2)(ii)(J)(2) - Personnel error (procedural deficiency)	93 (9)
(2)(ii)(K) - - Safety system responses	100 (7)
(2)(ii)(L) - - Manufacturer and model no. information	67 (3)
(3) - - - - - Assessment of safety consequences	83 (15)
(4) - - - - - Corrective actions	95 (15)
(5) - - - - - Previous similar event information	87 (15)
(2)(i) - - - - - Text presentation	91 (15)

ABSTRACT

Requirements [50.73(b)(1)] - Descriptions	Percentage Scores () ^a
- Major occurrences(immediate cause/effect)	97 (15)
- Plant/system/component/personnel responses	99 (7)
- Root cause information	92 (15)
- Corrective action information	98 (15)
- Abstract presentation	87 (15)



TABLE 2. (continued)

CD **FIELDS**

Item Number(s) - Descriptions		Percentage Scores () ^a
1, 2, and 3 -	Plant name(unit #), docket #, page #s	100 (15)
4 - - - - -	Title	81 (15)
5, 6, and 7 -	Event date, LER no., report date	100 (15)
8 - - - - -	Other facilities involved	99 (15)
9 and 10 - -	Operating mode and power level	98 (15)
11 - - - - -	Reporting requirements	100 (15)
12 - - - - -	Licensee contact information	100 (15)
13 - - - - -	Coded component failure information	100 (15)
14 and 15 - -	Supplemental report information	97 (15)

a. Percentage scores are the result of dividing the total points for a requirement by the number of points possible for that requirement. (Note: Some requirements are not applicable to all LERs; therefore, the number of points possible was adjusted accordingly.) The number in parenthesis is the number of LERs for which the requirement was considered applicable.

b. A percentage score for this requirement is meaningless as it is not possible to determine from the information available to the analyst whether this requirement is applicable to a specific LER. It is always given 100% if it is provided and is always considered "not applicable" when it is not.



(1) excluded certain less significant information from a number of the discussions concerning that requirement or (2) totally failed to address the requirement in one or two of the selected LERs. The unit should review the LER specific comments presented in Appendix D to determine why it received less than a perfect score for certain requirements.

Specific Deficiencies and Observations

The more important deficiencies and observations for the text, abstract, and coded field sections of the LERs are discussed separately below..

Text Deficiencies and Observations

Safety assessment information for four of the LERs was considered to be lacking, Requirement 50.73(b)(3). A detailed safety assessment is required in every LER and, as suggested in NUREG-1022, Supplement No. 2, should include information such as:

1. An assessment of the consequences and implications of the event including specifics as to why it was concluded that there were "no safety consequences", if such was the case. It is inadequate to simply state "this event had no safety consequences or implications." without explaining how that conclusion was reached.
2. A safety assessment should discuss whether the event could have occurred under a different set of conditions where the safety implications would have been more severe. If the conditions during the event are considered the worst probable, the LER should so state.
3. Finally, a safety assessment should name other systems (if any) that were available to perform the function of the safety systems that were unavailable during the event.



The requirement to provide adequate identification for failed components, Requirement 50.73(b)(2)(ii)(L), was considered deficient in one of the three LERs involving a failed component. In most cases this requirement can be met by simply providing the manufacturer and model number for each failed component. For certain components (e.g., pipes, fitting, etc.) the material and size of the failed component may be more appropriate information. Whatever information is provided, it should be specific enough to allow the reader to determine if the failed component is the same as one that is used at his facility. In addition, there are instances when component identification can be important to the reader, even though the component did not fail. For example, if the design of a component contributes to the event, it would be helpful to provide information that would enable others to specifically identify that component.

The Energy Industry Identification System (EIIS) codes were not provided for the components or systems mentioned in seven of the 15 LERs. These codes should be provided for all components and systems referred to in the text, not just those that fail.

Abstract Deficiencies and Observations

While there are no specific requirements for an abstract, other than those given in 10 CFR 50.73(b)(1), an abstract should, as stated in NUREG-1022, Supplement No. 2, summarize the following information from the text:

- | | |
|----------------------------|--|
| 1. Cause/Effect | What happened that made the event reportable. |
| 2. Responses | Major plant, system, and personnel responses as a result of the event. |
| 3. Root/Intermediate Cause | The underlying cause of the event. What caused the component and/or system failure or the personnel error. |



4. Corrective Actions

What was done immediately to restore the plant to a safe and stable condition and what was done or planned to prevent recurrence of the event.

While these requirements were, in general, adequately addressed in the abstracts of the LERs reviewed, four of the abstracts were deficient in the area of presentation. The use of a more concise summary would have improved the abstract score for the four LERs that exceeded the specified maximum length of 1400 spaces.

Coded Fields Deficiencies and Observations

The main deficiency in the area of coded fields involves the titles, Item (4). Seven of the 15 titles failed to include adequate cause information, two failed to include the result of the event and one failed to include the link between the cause and the result. While the result is considered to be the most important part of the title, cause and link information (as suggested in NUREG-1022, Supplement No. 2) must be included to make a title complete. Example titles are presented in Appendix D for many of the LERs which were considered to have poor titles.

SUMMARY

Table 3 provides a summary of the areas that need improvement for the Diablo Canyon 1,2 LERs. For additional and more specific information concerning deficiencies, the reader should refer to the information presented in Appendices C and D. General guidance concerning requirements can be found in NUREG-1022, and NUREG-1022 Supplements No. 1 and 2.

As was mentioned earlier, this is the second time that the Diablo Canyon 1,2 LERs have been evaluated using the same methodology. The previous evaluation was reported in August of 1986. Table 4 provides a comparison of the scores for both evaluations. Small improvements in the



information provided concerning root cause, corrective actions, and safety system responses were partially offset by declines in safety consequence discussions and EIIS codes, thus resulting in an average text score that was unchanged. The overall average LER score of 9.3 remains well above the current industry overall average of 8.4. (Note: The industry overall average is the result of averaging the latest overall average LER score for each unit/station that has been evaluated using this methodology.)

3
4
2



TABLE 3. AREAS MOST NEEDING IMPROVEMENT FOR DIABLO CANYON 1,2 LERs

Areas	Comments
Safety assessment information	All LERs should include a detailed safety assessment. The text should discuss whether or not the event could have been worse had it occurred under different but probable circumstances and provide information about backup systems that were available to limit the consequences of the event.
Manufacturer and model number	Component identification information should be included in the text whenever a component fails. In addition, (although not specifically required by the current regulation) it would be helpful to identify a component if its design is suspected of contributing to the event.
EIIS codes	EIIS codes should be provided in the text for each component or system referred to in the text.
Abstracts	Abstracts should not exceed 1400 spaces in length.
Coded fields	
a. Titles	Titles should be written such that they better describe the event. In particular, cause and result information and the link between them should be included in each title.



TABLE 4. COMPARISON OF LER SCORES FOR DIABLO CANYON 1,2

<u>Report Date</u>	<u>August-86</u>	<u>August-87</u>
Text average	9.2	9.2
Abstract average	9.4	9.4
Coded fields average	9.4	9.4
Overall LER average	9.3	9.3



REFERENCES

1. Office for Analysis and Evaluation of Operational Data, Licensee Event Report System, NUREG-1022, U.S. Nuclear Regulatory Commission, September 1983.
2. Office for Analysis and Evaluation of Operational Data, Licensee Event Report System, NUREG-1022 Supplement No. 1, U.S. Nuclear Regulatory Commission, February 1984.
3. Office for Analysis and Evaluation of Operational Data, Licensee Event Report System, NUREG-1022 Supplement No. 2, U.S. Nuclear Regulatory Commission, September 1985.



APPENDIX A

IER SAMPLE SELECTION
INFORMATION
FOR DIABLO CANYON 1,2



TABLE A-1. LER SAMPLE SELECTION FOR DIABLO CANYON 1,2

Sample Number	LER Number	Unit Number	Comments
1	86-010-01	1	SCRAM
2	86-011-00	1	
3	86-013-01	1	
4	86-014-00	1	ESF
5	86-019-00	1	
6	86-020-00	1	SCRAM
7	87-003-00	1	ESF
8	87-005-00	1	
9	87-007-00	1	SCRAM
10	86-022-00	2	
11	86-023-00	2	SCRAM, ESF
12	86-027-01	2	
13	87-002-00	2	
14	87-004-00	2	ESF
15	87-005-00	2	



APPENDIX B
EVALUATION SCORES OF
INDIVIDUAL LERS FOR DIABLO CANYON 1,2



TABLE B-1. EVALUATION SCORES OF INDIVIDUAL LERS FOR DIABLO CANYON 1,2

	LER Sample Number ^a							
	1	2	3	4	5	6	7	8
kt	9.5	9.9	9.4	9.5	9.7	8.9	9.6	9.8
stract	8.3	9.7	9.1	9.7	9.7	9.3	9.8	9.2
ded Fields	9.2	10.0	8.5	9.1	9.5	8.7	9.4	10.0
erall	9.1	9.9	9.2	9.5	9.7	9.0	9.6	9.6

	LER Sample Number ^a							Average
	9	10	11	12	13	14	15	
	9.0	9.0	10.0	9.1	8.9	7.1	7.9	9.2
ract	8.8	9.5	9.6	9.4	8.5	9.8	9.6	9.4
i Fields	9.0	10.0	10.0	9.8	9.5	10.0	9.0	9.4
ll	8.9	9.2	9.9	9.3	9.2	8.2	8.5	9.3

see Appendix A for a list of the corresponding LER numbers.



TABLE C-1. TEXT DEFICIENCIES AND OBSERVATIONS FOR DIABLO CANYON 1,2

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
<u>50.73(b)(2)(11)(A)</u> --Plant operating conditions before the event were not included or were inadequate.		1 (15)
<u>50.73(b)(2)(11)(B)</u> --Discussion of the status of the structures, components, or systems that were inoperable at the start of the event and that contributed to the event was not included or was inadequate.		0 (5)
<u>50.73(b)(2)(11)(C)</u> --Failure to include sufficient date and/or time information.		3 (15)
Date information was insufficient.	1	
Time information was insufficient.	3	
<u>50.73(b)(2)(11)(D)</u> --The root and/or intermediate cause of the component or system failure was not included or was inadequate.		3 (15)
a. Cause of component failure was not included or was inadequate.	2	
b. Cause of system failure was not included or was inadequate.	1	
<u>50.73(b)(2)(11)(E)</u> --The failure mode, mechanism (immediate cause), and/or effect (consequence) for each failed component was not included or was inadequate.		1 (3)
a. Failure mode was not included or was inadequate.	1	
b. Mechanism (immediate cause) was not included or was inadequate.	0	
c. Effect (consequence) was not included or was inadequate.	0	



TABLE C-1. (continued)

Description of Deficiencies and Observations	Number of LERs with Deficiencies and Observations	
	Sub-paragraph Totals ^a	Paragraph Totals () ^b
<u>50.73(b)(2)(ii)(J)(1)</u> --Operator actions that affected the course of the event including operator errors and/or procedural deficiencies were not included or were inadequate.		0 (8)
<u>50.73(b)(2)(ii)(J)(2)</u> --The discussion of each personnel error was not included or was inadequate.		3 (9)
a. OBSERVATION: A personnel error was implied by the text, but was not explicitly stated.	0	
b. <u>50.73(b)(2)(ii)(J)(2)(i)</u> --Discussion as to whether the personnel error was cognitive or procedural was not included or was inadequate.	1	
c. <u>50.73(b)(2)(ii)(J)(2)(ii)</u> --Discussion as to whether the personnel error was contrary to an approved procedure, was a direct result of an error in an approved procedure, or was associated with an activity or task that was not covered by an approved procedure was not included or was inadequate.	0	
d. <u>50.73(b)(2)(ii)(J)(2)(iii)</u> --Discussion of any unusual characteristics of the work location (e.g., heat, noise) that directly contributed to the personnel error was not included or was inadequate.	0	
<u>50.73(b)(2)(ii)(J)(2)(iv)</u> --Discussion of the type of personnel involved (i.e., contractor personnel, utility licensed operator, utility nonlicensed operator, other utility personnel) was not included or was inadequate.	2	



TABLE C-1. (continued)

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
a. A discussion of actions required to correct the problem (e.g., return the component or system to an operational condition or correct the personnel error) was not included or was inadequate.	0	
b. A discussion of actions required to reduce the probability of recurrence of the problem or similar event (correct the root cause) was not included or was inadequate.	3	
c. OBSERVATION: A discussion of actions required to prevent similar failures in similar and/or other systems (e.g., correct the faulty part in all components with the same manufacturer and model number) was not included or was inadequate.	0	
<u>50.73(b)(5)</u> --Information concerning previous similar events was not included or was inadequate.		3 (15)



TABLE C-1. (continued)

Description of Deficiencies and Observations	Number of LERs with Deficiencies and Observations	
	Sub-paragraph Totals ^a	Paragraph Totals (.) ^b
<u>50.73(b)(2)(1)</u> --Text presentation inadequacies.		3 (15)
a. OBSERVATION: A diagram would have aided in understanding the text discussion.	1	
b. Text contained undefined acronyms and/or plant specific designators.	1	
c. The text contains other specific deficiencies relating to the readability.	2	

a. The "sub-paragraph total" is a tabulation of specific deficiencies or observations within certain requirements. Since an LER can have more than one deficiency for certain requirements, (e.g., an LER can be deficient in the area of both date and time information), the sub-paragraph totals do not necessarily add up to the paragraph total.

b. The "paragraph total" is the number of LERs that have one or more requirement deficiencies or observations. The number in parenthesis is the number of LERs for which the requirement was considered applicable.



TABLE C-2. ABSTRACT DEFICIENCIES AND OBSERVATIONS FOR DIABLO CANYON 1,2

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
A summary of occurrences (immediate cause and effect) was not included or was inadequate.		1 (15)
A summary of plant, system, and/or personnel responses was not included or was inadequate.		1 (7)
a. Summary of plant responses was not included or was inadequate.	0	
b. Summary of system responses was not included or was inadequate.	1	
c. Summary of personnel responses was not included or was inadequate.	0	
A summary of the root cause of the event was not included or was inadequate.		3 (15)
A summary of the corrective actions taken or planned as a result of the event was not included or was inadequate.		1 (15)



TABLE C-2. (continued)

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
Abstract presentation inadequacies.		4 (15)
a. OBSERVATION: The abstract contains information not included in the text. The abstract is intended to be a summary of the text, therefore, the text should discuss all information summarized in the abstract.	1	
b. The abstract was greater than 1400 spaces.	4	
c. The abstract contains undefined acronyms and/or plant specific designators.	1	
d. The abstract contains other specific deficiencies (i.e., poor summarization, contradictions, etc.).	0	

a. The "sub-paragraph total" is a tabulation of specific deficiencies or observations within certain requirements. Since an LER can have more than one deficiency for certain requirements, the sub-paragraph totals do not necessarily add up to the paragraph total.

b. The "paragraph total" is the number of LERs that have one or more deficiency or observation. The number in parenthesis is the number of LERs for which a certain requirement was considered applicable.



TABLE C-3. CODED FIELDS DEFICIENCIES AND OBSERVATIONS FOR DIABLO CANYON 1,2

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
Facility Name		0 (15)
a. Unit number was not included or incorrect.		
b. Name was not included or was incorrect.		
c. Additional unit numbers were included but not required.		
Docket Number was not included or was incorrect.		0 (15)
Page Number was not included or was incorrect.		0 (15)
Title was left blank or was inadequate.		8 (15)
a. Root cause was not given or was inadequate.	7	
b. Result (effect) was not given or was inadequate.	2	
c. Link was not given or was inadequate.	1	
Event Date		0 (15)
a. Date not included or was incorrect.		
b. Discovery date given instead of event date.		
LER Number was not included or was incorrect..		0 (15)
Report Date		0 (15)
a. Date not included.		
b. OBSERVATION: Report date was not within thirty days of event date (or discovery date if appropriate).		



TABLE C-3. (continued)

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
Other Facilities information in field is inconsistent with text and/or abstract.		1 (15)
Operating Mode was not included or was inconsistent with text or abstract.		0 (15)
Power level was not included or was inconsistent with text or abstract.		0 (15)
Reporting Requirements		0 (15)
a. The reason for checking the "OTHER" requirement was not specified in the abstract and/or text.		
b. OBSERVATION: It may have been more appropriate to report the event under a different paragraph.		
c. OBSERVATION: It may have been appropriate to report this event under an additional unchecked paragraph.		
Licensee Contact		0 (15)
a. Field left blank.		
b. Position title was not included.		
c. Name was not included.		
d. Phone number was not included.		
Coded Component Failure Information		0 (15)
a. One or more component failure sub-fields were left blank.		
b. Cause, system, and/or component code is inconsistent with text.		
c. Component failure field contains data when no component failure occurred.		
d. Component failure occurred but entire field left blank.		



TABLE C-3. (continued)

<u>Description of Deficiencies and Observations</u>	<u>Number of LERs with Deficiencies and Observations</u>	
	<u>Sub-paragraph Totals^a</u>	<u>Paragraph Totals ()^b</u>
Supplemental Report		1 (15)
a. Neither "Yes"/"No" block of the supplemental report field was checked.	0	
b. The block checked was inconsistent with the text.	1	
Expected submission date information is inconsistent with the block checked in Item (14).		1 (15)

a. The "sub-paragraph total" is a tabulation of specific deficiencies or observations within certain requirements. Since an LER can have more than one deficiency for certain requirements, the sub-paragraph totals do not necessarily add up to the paragraph total.

b. The "paragraph total" is the number of LERs that have one or more requirement deficiencies or observations. The number in parenthesis is the number of LERs for which a certain requirement was considered applicable.



APPENDIX D

LER COMMENT SHEETS FOR
DIABLO CANYON 1,2



TABLE D-1: SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
1. LER Number: 86-010-01	
Scores: Text = 9.5 Abstract = 8.3 Coded Fields = 9.2 Overall = 9.1	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(f)(C)</u>--Date/time information is inadequate. It would be helpful to give information such as when the plant was stabilized and when the corrective actions were completed. 2. <u>50.73(b)(5)</u>--Information concerning previous similar events is inadequate. In this case a similar event may be improper installation of other design changes, which might indicate that better preparation for design changes or better quality checks are needed.
Abstract	<ol style="list-style-type: none"> 1. <u>50.73(b)(1)</u>--Summary of root cause is not included. The abstract doesn't indicate that the terminations were incorrectly installed during a design change. 2. The abstract contains greater than 1400 spaces. 3. OBSERVATION: The abstract is intended to be a summary of the text; therefore, the text must include all information summarized in the abstract. This abstract contains information that was not included in the text. The broken lug screw was not discussed in the Revision "1" text. (Note: It was discussed in the Revision "0" text.)
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: Cause is not included. A more appropriate title might be "Reactor Trip during Testing of the Reactor Trip Switchgear due to an Installation/Personnel Error".



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
2. LER Number: 86-011-00	
Scores: Text = 9.9 Abstract = 9.7 Coded Fields = 10.0 Overall = 9.9	
Text	1. <u>50.73(b)(3)</u> --OBSERVATION: The consequences of the event had it occurred under more severe conditions were not discussed. If the event occurred under what are considered the most severe conditions, it would be helpful to state so in the text.
Abstract	1. No comments.
Coded Fields	1. No comments.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1.(275)

Section	Comments
3. LER Number: 86-013-01	
Scores: Text = 9.4 Abstract = 9.1 Coded Fields = 8.5 Overall = 9.2	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(ii)(C)</u>--Date vibration first noticed and repairs to CFCV 1-2 were completed could have been provided. 2. <u>50.73(b)(2)(ii)(D)</u>--Why did the CFCV 1-2 motor bearing fail? 3. <u>50.73(b)(2)(ii)(F)</u>--The Energy Industry Identification System code for each component and/or system referred to in the text is not included. 4. <u>50.73(b)(2)(ii)(I)</u>--Given that the snubbers had been inspected on September 8 and 10, why was the inservice inspection specialist inspecting these snubbers again? 5. <u>50.73(b)(2)(ii)(L)</u>--OBSERVATION: Event though the snubber did not "fail", it would have been good to identify it as its design may have contributed to the event. The defective bearing on the CFCV 1-2 motor could also have been due to personnel error. 6. <u>50.73(b)(3)</u>--How were the safety consequences of the inactive snubber evaluated (e.g., by a specific computer program)?
Abstract	<ol style="list-style-type: none"> 1. <u>50.73(b)(1)</u>--Summary of occurrences [immediate cause(s) and effects(s)] is inadequate. The fact that the nonfunctional snubber put the plant in a possibly serious degraded condition is not clear from reading the abstract. 2. The abstract states "the load pin was totally removed"; the word "removed" implies an action performed by a person. Given the cause is believed to be vibration, the phrase "had dropped out" might be more appropriate.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: Cause is not included and the result is inadequate. A better title might be "Vibration Believed To Have Caused Snubber Load Pin To Fall Out Resulting in a Degraded Plant".



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
3. LER Number: 86-013-01 (Continued)	
	2. <u>Item (13)</u> --Information could have been provided in these fields as repairs were required.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
4. LER Number: 86-014-00	
Scores: Text = 9.5 Abstract = 9.7 Coded Fields = 9.1 Overall = 9.5	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(11)(D)</u>--When a root cause cannot be found, a discussion of possible causes that were investigated could be helpful to others investigating a similar problem. 2. <u>50.73(b)(4)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information.
Abstract	<ol style="list-style-type: none"> 1. No comment.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: Cause (unknown) is not included. 2. <u>Item (8)</u>--The reason for listing Unit 2 in this field is not explained in the text. A reader must assume that the control room is common to both units. 3. <u>Item (15)</u>--Expected Submission Date is not included.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
5. LER Number: 86-019-00	
Scores: Text = 9.7 Abstract = 9.7 Coded Fields = 9.5 Overall = 9.7	
Text	1. <u>50.73(b)(2)(11)(F)</u> --The Energy Industry Identification System code for each component and/or system referred to in the text is not included.
Abstract	1. No comments.
Coded Fields	1. <u>Item (4)</u> --Title: Cause information (procedural deficiency) is not included.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
6. LER Number: 86-020-00	
Scores: Text = 8.9 Abstract = 9.3 Coded Fields = 8.7 Overall = 9.0	
Text	<ol style="list-style-type: none"> <li>1. <u>50.73(b)(2)(ii)(D)</u>--The root and/or intermediate cause discussion concerning the closing of the turbine governor valves is inadequate. Were these valves closed too fast or at the wrong time (thus leading to the opening of the 10 percent steam dumps)? <li>2. <u>50.73(b)(2)(ii)(F)</u>--The Energy Industry Identification System code for each component and/or system referred to in the text is not included. <li>3. <u>50.73(b)(2)(ii)(J)(2)</u>--Discussion of the personnel error/procedural deficiency is inadequate. <u>50.73(b)(2)(ii)(J)(2)(iv)</u>--Discussion of the type of personnel involved (e.g., contractor personnel, utility licensed operator, utility nonlicensed operator, other utility personnel) is not included. <li>4. <u>50.73(b)(4)</u>--Although there is no requirement to do so, a supplemental report may be appropriate to describe the results of the PG&E investigation concerning possible modifications if these results significantly change the reader's perception of the event and/or require additional corrective actions be taken. Without a supplemental report, the reader does not know what specific action will be taken to prevent recurrence of trips such as the first one. <li>5. The text appears to contradict itself. The second paragraph under <u>Description of Event</u> says the low steam generator level trip was the result of closing the turbine generator governor valves but the first paragraph under <u>Root Cause</u> implies the low steam generator level was the result of "an associated transient in the secondary plant" and not the closing of the turbine governor valves.
Abstract	<ol style="list-style-type: none"> <li>1. <u>50.73(b)(1)</u>--The turbine generator trip is not mentioned.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
6. LER Number: 86-020-00 (Continued)	
	<ol style="list-style-type: none"> 2. <u>50.73(b)(1)</u>--Summary of cause information is inadequate. Personnel error is not specifically mentioned in connection with the second trip. 3. See text comment number 4.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: The cause is not included and the link is inadequate. A better title might be "Possible Equipment or Logic Problem Results in Reactor Trip When Turbine Governor Valves Were Closed". 2. <u>Item (14)</u>--See text comment number 4.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
7. LER Number: 87-003-00	
Scores: Text = 9.6 Abstract = 9.8 Coded Fields = 9.4 Overall = 9.6	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(ii)(A)</u>--Information concerning the plant operating conditions before the event is inadequate. The power level should be given for events which occur during power operation. 2. <u>50.73(b)(2)(ii)(D)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 3. <u>50.73(b)(4)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information.
Abstract	<ol style="list-style-type: none"> 1. No comment.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: Cause (Unknown) is not included.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
8. LER Number: 87-005-00	
Scores: Text = 9.8 Abstract = 9.2 Coded Fields = 10.0 Overall = 9.6	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(4)</u>--A discussion of actions required to correct the immediate problem and return the applicable systems/component(s) to an operable status is not included for the repair of the underfrequency relay.
Abstract	<ol style="list-style-type: none"> 1. <u>50.73(b)(1)</u>--Summary of root cause is not included for the failed relay. 2. <u>50.73(b)(1)</u>--Summary of corrective actions taken or planned as a result of the event is inadequate. See text comment number 1.
Coded Fields	<ol style="list-style-type: none"> 1. No comment.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 1 (275)

Section	Comments
9. LER Number: 87-007-00	
Scores: Text = 9.0 Abstract = 8.8 Coded Fields = 9.0 Overall = 8.9	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(i)(F)</u>--The Energy Industry Identification System code for each component and/or system referred to in the text is not included. 2. <u>50.73(b)(3)</u>--Discussion of the assessment of the safety consequences and implications of the event is inadequate. OBSERVATION: The consequences of the event had it occurred under more severe conditions were not discussed. If the event occurred under what are considered the most severe conditions, it would be helpful to state so in the text.
Abstract	<ol style="list-style-type: none"> 1. <u>50.73(b)(1)</u>--The fact that STP I-3A was in progress at the time of the fuse opening was not mentioned in the abstract. 2. <u>50.73(b)(1)</u>--The fact that the event was attributed to a random fuse failure was not stated. 3. <u>50.73(b)(1)</u>--The fact that the fuse failure was added to the equipment history database was not mentioned. 4. Additional space is available within the abstract field to provide more information but it was not utilized.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--Title: Cause information (unknown) is inadequate. 2. <u>Item (9)</u>--The operating mode in this field differs from the information in the text or abstract.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
10. LER Number: 86-022-00	
Scores: Text = 9.0 Abstract = 9.5 Coded Fields = 10.0 Overall = 9.2	
Text	<ol style="list-style-type: none"> <li>1. <u>50.73(b)(2)(11)(J)(2)</u>--Discussion of the personnel error/procedural deficiency is inadequate. Additional details as to how the operators misinterpreted the readings would be helpful. Did the procedure require the operators to use the computer to verify the readings? <li>2. <u>50.73(b)(3)</u>--Discussion of the assessment of the safety consequences and implications of the event is inadequate. The safety assessment should discuss possible consequences not just show that this particular event had no problem, and/or reasons why no problem could develop. For example, what are the safety implications of having the AFD outside limits? Are there other systems which could detect the error before a serious problem developed?
Abstract	1. No comment.
Coded Fields	1. No comment.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
11. LER Number: 86-023-00	
Scores: Text = 10.0 Abstract = 9.6 Coded Fields = 10.0 Overall = 9.9	
Text	1. Although there is no requirement to do so, a supplemental report may be appropriate to describe the results of the analysis of the steam line break if these results significantly change the reader's perception of the event and/or require additional corrective actions be taken.
Abstract	1. The abstract contains greater than 1400 spaces.
Coded Fields	1. No comment.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
12. LER Number: 86-027-01	
Scores: Text = 9.1 Abstract = 9.4 Coded Fields = 9.8 Overall = 9.3	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(ii)(F)</u>--The Energy Industry Identification System code for each component and/or system referred to in the text is not included. 2. <u>50.73(b)(4)</u>--Were there any corrective actions (to prevent recurrence) directed towards ensuring the technicians will not overlook counting the sample (other than the Foreman catching the oversight)? 3. The text appears to contradict itself. The first paragraph under "Event" says the 48 hour surveillance requirement was not satisfied but the very next paragraph says "the surveillance requirement was satisfied on December 12", which was within the subject 48 hour period.
Abstract	<ol style="list-style-type: none"> 1. <u>50.73(b)(1)</u>--See text comments number 2 and 3. These same questions exist after reading the abstract. 2. The abstract contains greater than 1400 spaces.
Coded Fields	<ol style="list-style-type: none"> 1. <u>Item (4)</u>--The phrase "Technical Specification Required" could be added just prior to the word "Surveillance" in the title.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
13. LER Number: 87-002-00	
Scores: Text = 8.9 Abstract = 9.5 Coded Fields = 9.5 Overall = 9.2	
Text	<ol style="list-style-type: none"> 1. <u>50.73(b)(2)(ii)(F)</u>--The Energy Industry Identification System code for each component referred to in the text is not included (e.g., the codes for the valve and pump aren't given). 2. <u>50.73(b)(2)(ii)(J)(2)(iv)</u>--Specifically (by type of personnel) who was responsible for closing the valve? 3. <u>50.73(b)(3)</u>--Although there is no requirement to do so, a supplemental report may be appropriate to describe the results of reevaluating the safety analysis if these results significantly change the reader's perception of the event and/or require additional corrective actions be taken. What are the consequences of only having RHR injection into two cold legs? 4. <u>50.73(b)(4)</u>--Although there is no requirement to do so, a supplemental report may be appropriate to describe the results of the review of the test procedures if these results significantly change the reader's perception of the event and/or require additional corrective actions be taken.
Abstract	1. No comment.
Coded Fields	1. <u>Item (14)</u> --The block checked appears to be inconsistent with information provided in the text; see text comment numbers 3 and 4.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
14. LER Number: 87-004-00	
Scores: Text = 7.1 Abstract = 9.8 Coded Fields = 10.0 Overall = 8.2	
Text	<ol style="list-style-type: none"> 1. Submittal of an LER without a text is acceptable; however, the abstract must then meet all the requirements of a text and still be less than 1400 spaces. The following comments apply to the abstract that was evaluated as if it were a text. 2. <u>50.73(b)(2)(i)(C)</u>--What time was the unit stabilized after the trip and safety injection? 3. <u>50.73(b)(2)(i)(D)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 4. <u>50.73(b)(3)</u>--Discussion of the assessment of the safety consequences and implications of the event is not included. 5. <u>50.73(b)(4)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 6. <u>50.73(b)(5)</u>--Information concerning previous similar events is inadequate. LER numbers are not included.
Abstract	1. No comments.
Coded Fields	1. No comments.



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
15. LER Number: 87-005-00	
Scores: Text = 7.9 Abstract = 9.6 Coded Fields = 9.0 Overall = 8.5	
Text	<ol style="list-style-type: none"> 1. Submittal of an LER without a text is acceptable; however, the abstract must then meet all the requirements of a text and still be less than 1400 spaces. The following comments apply to the abstract that was evaluated as if it were a text. 2. <u>50.73(b)(2)(ii)(D)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 3. <u>50.73(b)(2)(ii)(E)</u>--Was the valve leak seat leakage or external leakage? 4. <u>50.73(b)(2)(ii)(F)</u>--The Energy Industry Identification System code for each component and/or system referred to in the text is not included. No codes are provided for the valve. 5. <u>50.73(b)(2)(ii)(I)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 6. <u>50.73(b)(2)(ii)(J)(1)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. 7. <u>50.73(b)(2)(ii)(L)</u>--Identification (e.g., manufacturer and model no.) of the failed component(s) discussed in the text is not included. 8. <u>50.73(b)(3)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information. What is meant by "significant" in the phrase "no significant radiological release"? Why was the unit not considered stable until two and a half hours after the RHR pump was restarted? Did it take that long for the RCS temperature to stabilize?



TABLE D-1. SPECIFIC LER COMMENTS FOR DIABLO CANYON 2 (323)

Section	Comments
15. LER Number: 87-005-00 (Continued)	
	<p>9. <u>50.73(b)(4)</u>--OBSERVATION: The score for this requirement is based on the assumption that the supplemental report will contain all the necessary information.</p> <p>10. <u>50.73(b)(5)</u>--Information concerning previous similar events is not included. If no previous similar events are known, the text should so state.</p> <p>11. Acronym(s) and/or plant specific designator(s) are undefined.</p> <p>12. OBSERVATION: A diagram or figure would aid in understanding the event.</p>
Abstract	<p>1. <u>50.73(b)(1)</u>--OBSERVATION: The scores given for the cause and corrective actions summaries are based on the assumption that the supplemental report will contain all the necessary information.</p> <p>2. Abstract contains acronym(s) and/or plant specific designator(s) that are undefined.</p> <p>3. The abstract contains greater than 1400 spaces.</p>
Coded Fields	<p>1. <u>Item (4)</u>--Title: Cause information is not provided.</p>

