

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-275/84-09

Docket No. 50-275

License No. DPR-76

Licensee: Pacific Gas and Electric Company

77 Beale Street, Room 1435

San Francisco, California 94106

Facility Name: Diablo Canyon Unit 1

Inspection at: Engineering Office, 45 Fremont, San Francisco, California
Diablo Canyon Site, San Luis Obispo County, California

Inspection Conducted: April 23 to April 27, 1984
May 14 to May 25, 1984

Inspector: Harvey L. Carter 6/20/84
Thomas F. Crowley, Reactor Inspector Date

Approved by: Harvey L. Carter 6/20/84
Harvey L. Carter, Chief Date
Engineering Section

Summary:

Inspection between April 23 - April 27, 1984 and May 14 - May 25, 1984
(Report No. 50-275/84-09)

Areas Inspected: Special inspection by a regional based inspector of the Seismically Induced System Interaction Program (SISIP), as evaluated in Supplement 11 to the Diablo Canyon Safety Evaluation Report, NUREG-0675. Also, a followup on SISIP related allegations was performed.

The inspection involved 48 inspection hours by one inspector.

Results: Of the areas inspected, no items of noncompliance were identified, however four items were identified for future followup.

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DETAILS

1. Persons Contacted

a. Pacific Gas and Electric Company (PG&E)

1,3 J. B. Hoch, Project Manager
1,2,3 L. W. Horn, Senior Mechanical Engineer, SIP
1,3 C. O. Coffey, Senior Licensing Engineer
1 A. Ross, Consultant
1,3 S. Traisman, Consultant
1 K. Bych, NPO Senior Safety Review Engineer
1 T. Hook, NPO Production Engineer
2 L. Womack, NPO Engineering Manager
2 J. Nolan, NPO Design Change Coordinator
3 R. A. Young, Special Projects Group Leader
2,3 M. R. Tresler, Assistant Project Engineer
2 J. R. Manning, Construction Superintendent
2 R. R. Lieber, Field Construction Manager
2 J. M. Gisclon, Assistant Plant Manager, NPO
2 R. C. Thornberry, Plant Manager, NPO
2 W. B. McLane, Materials and Project Coordination Manager
2 M. S. Dobrzensky, QA Engineer
2 D. A. Rockwell, Special Projects Engineer
2 H. Friend, Project Completion Manager
2 E. Murphy, Regulatory Compliance Supervisor
2 M. Leppke, Onsite Project Engineer
2 G. Sarkisian, News Series Representative

b. Bechtel Power Corporation

S. Chesnut, Mechanical Engineer
S. Skochko, Instrument and Controls Engineer
J. Prokopchak, Construction Engineer
2 J. P. Blatchford, Project Manager
2,3 M. J. Jacobson, Project QA Engineer
2 D. K. Cosgrove, QA Engineer/OPEG
2 P. F. Mason, Special Projects
2 R. G. Oman, Assistant Project Engineer, Unit 1

1 - Denotes those attending the exit interview on May 1, 1984.
2 - Denotes those attending the exit interview on May 25, 1984.
3 - Denotes those attending the discussion held May 31, 1984.

2. Background

As stated in Supplement 11 to the Safety Evaluation Report:

"...the Advisory Committee on Reactor Safeguards (ACRS) requested the applicant to evaluate the consequences of failure of nonseismic equipment and piping interacting with safety systems following an earthquake to determine if the Diablo Canyon plants can be safely shut down following such a postulated accident..."

"...as a result of the recommendations made at this meeting (ACRS Ad Hoc Subcommittee on TMI-2 Accident Implications, November 5, 1979), PG&E developed a systems interaction program for seismically induced events..."

"...in their letter to us dated May 27, 1980, PG&E has committed to complete their program, including all necessary modifications, for Unit 1 prior to the issuance of any license authorizing full-power operation of that unit..."

3. Inspection

The inspector reviewed the Systems Interaction Program (SIP) Manual, Revision 3, dated May 5, 1983, controlled copy #33, which describes the implementation of the program. The inspector examined twenty-four (24) SIP interaction packages out of a total two thousand two hundred four (2,204) interactions, as requested per the letter of Mr. Darrell G. Eisenhut, Director, Division of Licensing, to Mr. John B. Martin, Administrator, Region V, dated April 3, 1984. The inspector examined sixty (60) SIP related modifications in the field and held discussions with various individuals responsible for SIP implementation.

4. Results

Staff analysis of the Unit 1 SISIP activities concluded that appropriate system interaction evaluations have been performed, and other than the remaining modifications yet to be installed, the Unit 1 SISIP is complete. In addition the inspector found four items requiring followup. The items are described below along with the corresponding follow up action.

a. Review of SIP Documentation Packages:

The inspector examined the following SIP interaction packages:

03-22-01-01	01-06-01-01	24-12-03-01
07-08-01-02	18-01-23-02	03-28-23-01
09-04-02-03	22-17-01-01	06-01-04-07
32-01-33-05	24-01-118-01	30-01-99-02
06-01-01-06	25-200-02-01	03-05-02-03
15-01-29-01	04-04-01-01	11-07-05-05
20-04-01-03	22-01-01-02	23-67-02-01
32-01-27-02	23-12-04-01	25-179-02-01

The documentation packages associated with the reviews required improvement, in that, most of the document packages did not contain all pertinent data forms. In these cases it was necessary to perform additional actions to review the requisite data. In addition, the documentation packages were found to contain reproductions of forms in place of originals (without annotation as to the fact that these copies were the official replacement for the missing originals), and corrections without proper annotation.

The licensee has committed that the SIP packages will be upgraded to standards required by the SIP manual. The inspector will re-examine SIP packages when notified by the licensee that their review is complete. (84-09-01)

b. Review of Field Modifications:

The inspector examined the field modifications required to resolve the following interactions:

24-06-01-01	32-01-32-01	20-14-01-03
24-07-16-01	32-01-33-01	28-04-51-05
25-177-02-01	32-01-34-01	28-04-40-02
24-11-03-01	30-01-99-03	28-04-44-03
24-07-01-02	*30-01-99-02	28-04-44-04
24-07-01-05	*32-01-27-02	28-04-44-07
24-07-05-01	*32-01-33-05	28-04-49-03
24-01-09-01	32-01-09-04	22-01-01-01
24-07-01-03	*03-22-01-01	22-07-01-02
30-01-65-03	03-22-02-02	*22-01-01-02
30-01-65-03	03-22-03-01	22-07-01-01
32-01-25-01	03-22-03-02	22-09-02-01
32-01-25-02	30-01-92-01	22-03-02-01
32-01-25-03	30-01-88-01	22-09-02-02
11-07-05-05	30-01-87-01	22-03-02-03
24-09-05-01	25-168-04-02	*22-17-01-01
32-01-11-03	25-165-04-03	22-16-01-01
32-01-25-10	25-168-04-01	22-09-02-03
32-01-11-01	25-165-04-02	22-03-02-02
32-01-11-02	22-09-04-01	*25-200-02-01

*Denotes interaction from package review list.

For interaction 25-200-02-01, the field verification report stated that the required modification was not installed. Further examination, by field verification, determined that the postulated interaction was not valid; therefore, the modification was no longer required, and the interaction was closed. Two issues arose here: (1) Per the interaction program the walkdown team does not verify a modification until construction notifies them in writing that the modification is complete. The inspector determined that construction had signed off this modification as complete without performing the work. This appeared to be an isolated event. General Construction has issued Minor Variation Report (MVR) M-4722 to resolve this problem.

(2) By initiating a Design Change Notice (DCN) or Action Request Transmittal (ART), Engineering has added to the plant design a modification required to resolve the interaction. Per paragraph 4.2.5.3 of the SIP manual, the verification team can accept field modifications that do not conform to design documents as long as the interaction has been removed. This could conceivably allow SIP personnel to accept incomplete design changes without engineering review, and without updating design documents if, indeed, the modification is not to be implemented. The inspector will pursue this as a followup item based on the licensee's commitments. (84-09-02)

c. Completion status of modifications:

There are required modifications which have not yet been implemented, to complete the Unit 1 SISIP. Of the thirty-seven (37) reported open items, twenty (20) are with Engineering, seven (7) are with General Construction, and ten (10) are awaiting field verification by SIP personnel.

The remaining modifications required to resolve Unit 1 SIP interactions are to be completed and closed per the SIP manual prior to issuance of a full power license. The licensee has committed to supply documentation stating that all modifications have been completed and that all SIP packages have been closed. (84-09-03)

d. Continuation of SISIP through plant operations:

At this time there are no methods within Nuclear Plant Operations (NPO) to continue the SISIP and to maintain the interaction modifications. During discussions with NPO personnel, NPO has stated that SIP awareness will be written into their design change, maintenance, and housekeeping procedures. The licensee has committed to supply a schedule and program description to this office that will describe the NPO mechanism to carry SISIP awareness into commercial operation. This schedule and description is due June 8, 1984. (84-09-04)

5. Allegation Followup

The inspector determined that due to the SISIP inspection findings, appropriate interactions have been properly evaluated, and therefore the following allegations are closed:

Allegation 9 -

Characterization: Board Notification 83-17 regarding Shoreham. NRC staff witness had concern that systems interaction has potential generic implications.

Staff position from SSER 21: "...The modifications associated with the seismic systems interactions program must be completed prior to full power operations as documented in Supplement 11, NUREG-0675... ."

Allegation 13 -

Characterization: Inadequate Seismic Systems

Staff position from SSER 21: "...The completion of the seismic systems interaction study and modifications identified will achieve the degree of safety desired by the allegation. . ."

Allegation 36 -

Characterization: Resolution Analysis of Fluorescent light fixture interaction assumed conduit connection to be hinged - inspection found fixed connections.

Staff position from SSER 21: "...this issue is satisfactorily resolved pending completion of the safety and non-safety system interaction program... ."

Allegation 48 -

Characterization: Status of seismic interaction study prior to fuel load.

Staff position from SSER 21: "...we require that any necessary modifications for each unit be completed prior to issuing a license authorizing full-power operation of that unit... ."

6. Exit

An exit interview was held at the Region V office on May 1, 1984, regarding the inspection during April 23 - April 27, 1984. An exit interview was held at the Diablo Canyon site on May 25, 1984, regarding the inspection during May 14 - May 25, 1984. At these meetings the inspector summarized the scope and findings of the inspection. An additional meeting was held at the Region V office on May 31, 1984, to discuss the licensee's actions and commitments to resolve the items of concern mentioned in paragraph 4. The commitments are as follows:

- a. An upgrading of SIP packages by the licensee has begun and will require two months to complete. The completion date is assumed to be July 31, 1984. This upgrade includes a review of the modifications accepted "as is".
- b. The licensee will include an internal QA audit of their package upgrade effort.
- c. Nuclear Plant Operations will supply the NRC with their schedule and program description for the carry over of SISIP into commercial operation by June 8, 1984.
- d. For information only, the licensee stated that all remaining modifications, including field verification and package close out are to be completed by June 4, 1984.