

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8212140447    DOC. DATE: 82/12/10    NOTARIZED: NO    DOCKET #  
 FACIL: 50-275 Diablo Canyon Nuclear Power Plant, Unit 1, Pacific Ga    05000275  
 AUTH. NAME    AUTHOR AFFILIATION  
 REEDY, R.F.    R.F. Reedy, Inc.  
 RECIPIENT NAME    RECIPIENT AFFILIATION  
 DENTON, H.R.    Office of Nuclear Reactor Regulation, Director  
 ENGELKEN, R.H.    Region 5, Office of Director  
 MANEATIS, G.H.    Pacific Gas & Electric Co.

SUBJECT: Forwards Semimonthly Progress Rept 22 re independent design verification program for 821112-1210, consisting of Open Item Repts 7003-7006.

DISTRIBUTION CODE: D013S    COPIES RECEIVED: LTR 1 ENCL 1    SIZE: 10  
 TITLE: Diablo Canyon (50-275) Independent Design Verification Program

NOTES: J Hanchett 1cy PDR Documents.

05000275

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Category	Item	Value	Item	Value	Category	Item	Value
Category 1	Item 1.1	1	Item 1.2	1	Category 2	Item 2.1	1
	Item 1.3	1	Item 1.4	1		Item 2.2	1
	Item 1.5	1	Item 1.6	1		Item 2.3	1
	Item 1.7	1	Item 1.8	1		Item 2.4	1
	Item 1.9	1	Item 1.10	1		Item 2.5	1
	Item 1.11	1	Item 1.12	1		Item 2.6	1
	Item 1.13	1	Item 1.14	1		Item 2.7	1
	Item 1.15	1	Item 1.16	1		Item 2.8	1
	Item 1.17	1	Item 1.18	1		Item 2.9	1
	Item 1.19	1	Item 1.20	1		Item 2.10	1
Category 3	Item 3.1	1	Item 3.2	1	Category 4	Item 4.1	1
	Item 3.3	1	Item 3.4	1		Item 4.2	1
	Item 3.5	1	Item 3.6	1		Item 4.3	1

RFR

R.F. REEDY, INCORPORATED

236 N. Santa Cruz Avenue  
Los Gatos, California 95030 • (408) 354-9110

December 10, 1982

Mr. G. A. Maneatis  
Senior Vice President  
Facilities Development  
PACIFIC GAS & ELECTRIC COMPANY  
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San Francisco, CA 94106

Mr. H. R. Denton  
Director  
Office of Nuclear Reactor Regulation  
U.S. NUCLEAR REGULATORY COMMISSION  
Washington, D. C. 20555

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U.S. NUCLEAR REGULATORY COMMISSION  
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Dr. W. E. Cooper  
TELEDYNE ENGINEERING SERVICES  
130 Second Avenue  
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Docket No. 50-275  
Diablo Canyon Unit 1  
License No. DPR-76

Subject: Semimonthly Report  
Progress Report #22

Gentlemen:

Enclosed in numerical order are the Open Item Reports R. F. REEDY, INC. has issued during the reporting period November 12, 1982 to December 10, 1982.

As required by DCNPP-IDVPP-PP-05 and RFR-002, individuals assigned by this organization to the IDVP have completed an acceptable Statement Regarding Potential or Apparent Conflicts of Interest.

Very truly yours,

*Paul J. Herbert for*  
Roger F. Reedy, P.E.  
R. F. REEDY, INC.

RFR:na  
Disbursement List Attached

8212140447 821210  
PDR ADOCK 05000275  
R PDR

Roger F. Reedy, P.E. - Engineering Consulting

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December 10, 1982  
Semimonthly Report  
Disbursement List

cc: H. Schierling (2)  
Office of Nuclear Reactor Regulation  
U.S. NUCLEAR REGULATORY COMMISSION  
7920 Norfolk Avenue  
Bethesda, Maryland 20114

R. Fray  
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45 Fremont Street  
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Chief Power Engineer  
STONE & WEBSTER ENGINEERING CORPORATION  
245 Summer Street  
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R. L. Cloud  
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125 University Avenue  
Berkeley, CA 94710

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Berkeley, California 94710

H. H. Brown  
KIRKPATRICK, LOCKHART, HILL, CHRISTOPHER & PHILLIPS  
1900 M. Street, N.W.  
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D. F. Fleischaker  
Post Office Box 1178  
Oklahoma City, Oklahoma 73101

J. Reynolds  
CENTER FOR LAW IN THE PUBLIC INTEREST  
10951 West Pico Boulevard  
Suite 300  
Los Angeles, California 90064

B. Norton  
NORTON, BURKE, BERRY & FRENCH, P.C.  
3216 North 3rd Street  
Suite 300  
Phoenix Arizona 85012

A. C. Gehr  
SNELL & WILMER  
3100 Valley Bank Center  
Phoenix, Arizona 95073



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1. Date reported to PG&E and TES 11/23/82
2. Scheduled for FER, Inc. (Originator) Semimonthly Report No. December
3. Responsive to PG&E Technical Program: Task (if applicable)
4. Prepared as a result of:
  - a.  QA Audit and Review of PG&E
  - b.  Field Inspection Deficiency
  - c.  Independent Calculation Deficiency
  - d.  Seismic Input Deficiency
  - e.  Design Methodology Deficiency
  - f.  Other Deficiency
5. Structure(s), system(s) or component(s) involved:

Containment Isolation System

6. Description of Concern:

PG&E did not in all instances, resolve the open items identified by EDS Nuclear in accordance with their review of the Containment Isolation System.  
(See Attachment).

REFERENCES:

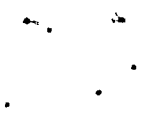
- a) EDS Nuclear "punchlist" of open items, EDS Job 0170-003, contract 5-5-74.
- b) PG&E memo to file dated 6/19/74 providing initial resolutions.
- c) Engineering change order No. M679.
- d) PG&E memo to file dated 6/5/75 providing final resolutions.
- e) Engineering change order 1051.

7. Significance of Concern:

Since the PG&E was the "designer" in this <sup>case</sup> and EDS Nuclear was the "reviewer" in accordance with 10 CFR 50, Appendix B, Criteria III, it is not clear that a true independent review was performed for those EDS recommendations which were not followed since: (1) there was no documented evidence that EDS concurred with the initial and final resolutions or; (2) there was no documented evidence that PG&E performed an independent review of the PG&E resolutions and determined that these resolutions met the design criteria.

8. Recommendation:

9. Signature: *Richard H. H. H. H. H.* (Originator/Organization)  
*for R.F. Ready*



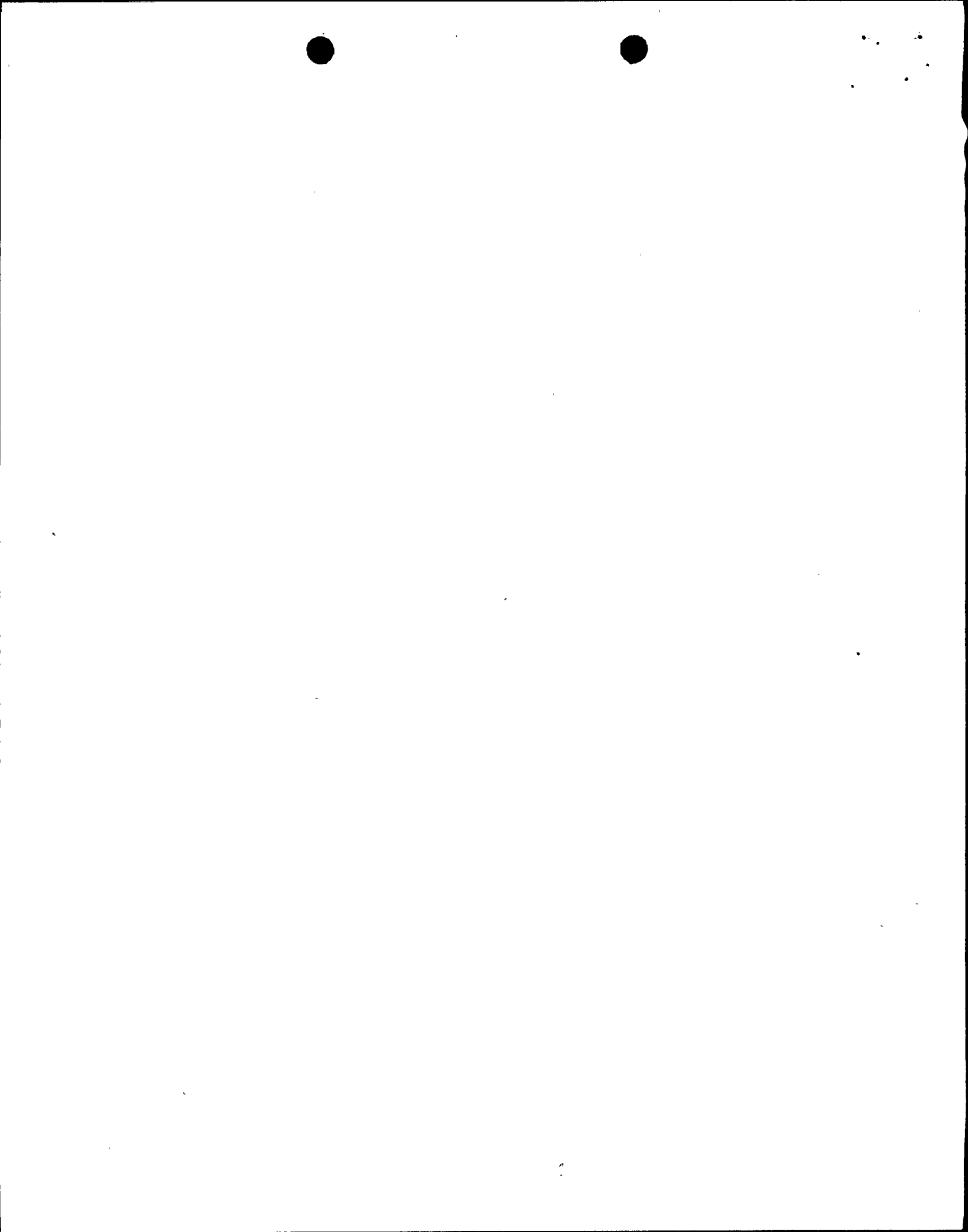


## ATTACHMENT 1

Concern: An independent design review of the Containment Isolation System was performed by EDS Nuclear in 1974. Upon completion of the review, EDS indicated in their report that the design was adequate if the punchlist items were resolved. Shortly after the "Design Review Report" was issued to PG&E, a meeting was held (6/7/74) between PG&E and EDS to resolve the punchlist items. Approximately 1 year later (6/5/75), a final resolution was prepared by PG&E which in some instances contradicted the proposed resolution identified in the 6/7/75 meeting with EDS. Some of the resolutions indicated "No action required". Due to this, there is no objective evidence to indicate that EDS concurred with the final resolutions or that an "independent" review had been performed within PG&E to verify the adequacy of the design.

Example 1. EDS Punchlist item No.2 reflected that PG&E should perform and document shaker tests to show that trip valve switches, solenoids, and process transmitters will operate during a seismic event. There is no PG&E documentation to indicate that this concern was resolved.

Example 2. PG&E memo dated 6/19/74 for item 1A indicated a resolution that T.N. Crawford will initiate a request to revise PRE-12 to indicate 1" as the lower limit of Code Class I. PG&E memo dated 6/5/75 indicated a final resolution to item 1A as "no further action" based on a second review by PG&E.



POTENTIAL PROGRAM RESOLUTION REPORT

File No. EOI-7003

File Revision No. 1

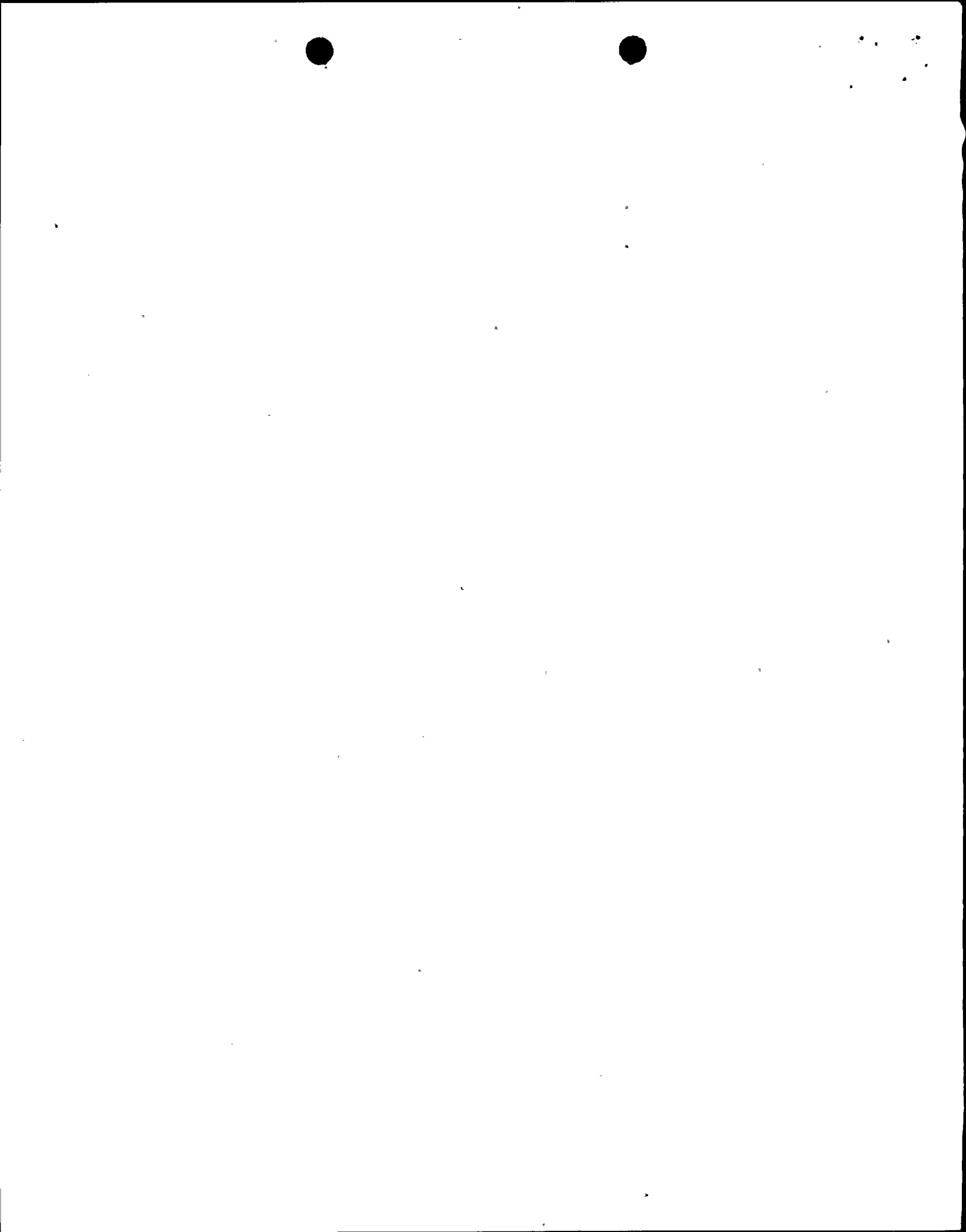
1. Resolution of an:  Open Item:     Class \_\_\_\_\_ Error 11/23/82
2. Recommended Independent Design Verification Program Resolution is as:
  - a.  Closed Item
  - b.  Deviation
  - c.  Open Item with future action by PG&E
3. Date Reported to Program Manager 11/23/82
4. Report submitted on behalf of BER, Inc. (Organization)
5. Resolution based on the following documentation:

EOI 7003, Rev. 0, states that PG&E could not provide documented evidence that an independent design review had been performed for those containment isolation system punchlist items resolved by PG&E (who was also the designer) in a manner different than the previously agreed upon PG&E/EDS resolution.

6. Program Resolution is:

PG&E to provide objective evidence and/or response relative to an independent review of containment isolation system punchlist items resolved differently than agreed upon with EDS and a determination that the containment isolation system meets established design criteria.

7. Signature: Fred H. Greenwood (Recommended by)  
for R.F. Reedy



1. Date reported to PG&E and TES 11/29/82
2. Scheduled for REF, Inc. (Originator) Semimonthly Report No. January
3. Responsive to PG&E Technical Program: Task \_\_\_\_\_ (if applicable)
4. Prepared as a result of:
  - a.  QA Audit and Review Report of Quadrex and PG&E
  - b.  Field Inspection Deficiency
  - c.  Independent Calculation Deficiency
  - d.  Seismic Input Deficiency
  - e.  Design Methodology Deficiency
  - f.  Other Deficiency
5. Structure(s), system(s) or component(s) involved:

Pipe rupture thermal hydraulic analyses outside containment and environmental qualification of related essential equipment.
6. Description of Concern:

Quadrex Report, PGE-01-27, Rev 1, Thermal Hydraulic Analysis of Postulated Pipe Breaks Outside Containment at D. C. Unit 1, assumes that certain doors will be closed or open in temperature pressure and flooding analyses and assumes that certain penetrations will remain open.
7. Significance of Concern:

The validity of the above stated Quadrex assumptions could not be ascertained; particularly, in view of:

  - a. There was no documented evidence of a site walkdown since 1974 when Quadrex made these assumptions.
  - b. Design changes to the plant since 1974 (e.g. fire protection) may have changed some openings, vents, doors, drains, etc.
  - c. DCP Plant Procedure STP-I-1A, Rev 3, to require function check of doors does not state whether fire doors are to be open or closed and had not yet been reviewed by PSRC or approved by the Plant Manager.
  - d. No documented evidence of Quadrex review of some pages of related calculations.
8. Recommendation:
9. Signature: Fred H. Greenwood (Originator/Organization)  
for R.F. Reedy



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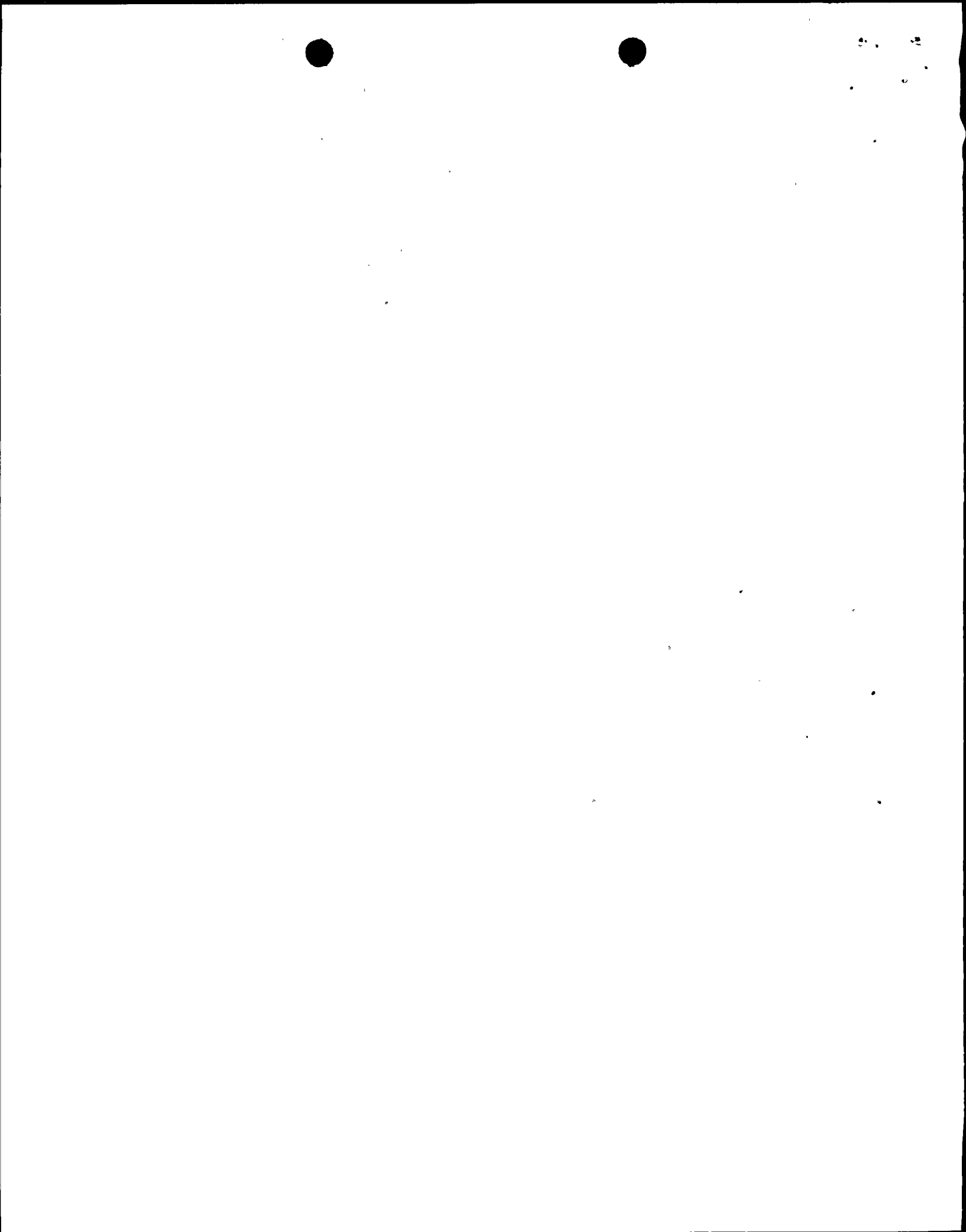
1. Resolution of an:  Open Item:  Class \_\_\_\_\_ Error 11/29/82
2. Recommended Independent Design Verification Program Resolution is as:
  - a.  Closed Item
  - b.  Deviation
  - c.  Open Item with future action by PG&E
3. Date Reported to Program Manager 11/29/82
4. Report submitted on behalf of RFI, Inc. (Organization)
5. Resolution based on the following documentation:

EOI-7004, Rev 0, states that PG&E/Quadrex could not provide documented evidence that assumptions made in PGE-01-27, Rev 1 (that certain doors were open or closed and certain penetrations were open) were still valid in view of plant design changes since 1974.

6. Program Resolution is:

PG&E to provide objective evidence and/or response relative to the current validity of assumptions made in Rev 1 to PGE-01-27 regarding doors and penetrations and their effect on temperature, pressure and flooding analyses.

7. Signature: *Fred Greenwood* (Recommended by)  
*for R.F. Reedy*





1. Date reported to PG&E and TES 11/29/82
2. Scheduled for RFR, Inc. (Originator) Semimonthly Report No. January
3. Responsive to PG&E Technical Program: Task \_\_\_\_\_ (if applicable)
4. Prepared as a result of:
  - a.  QA Audit and Review Report of Quadrex
  - b.  Field Inspection Deficiency
  - c.  Independent Calculation Deficiency
  - d.  Seismic Input Deficiency
  - e.  Design Methodology Deficiency
  - f.  Other Deficiency
5. Structure(s), system(s) or component(s) involved:  
Pipe rupture thermal hydraulic analyses outside containment and environmental qualification of related essential equipment.

6. Description of Concern:

There was no documented evidence that Quadrex performed temperature, pressure and flooding calculations in all compartments containing HELB. Judgement was used as the basis for not performing calculations for some compartments.

7. Significance of Concern:

1. Some compartments for which calculations or quantitative environments do not exist, certain essential equipment.
2. Judgement basis for not performing calculations included assumption that doors were closed or open (See EOI-7004).
3. Design changes since 1974 may have placed essential equipment into compartments where Quadrex judgement for not performing calculations was based on essential equipment not being in those compartments.

8. Recommendation:

9. Signature: *Fred H. Greenwood* (Originator/Organization)  
*for R.F. Reedy*



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1. Resolution of an:  Open Item:     Class \_\_\_\_\_ Error 11/29/82
2. Recommended Independent Design Verification Program Resolution is as:
  - a.  Closed Item
  - b.  Deviation
  - c.  Open Item with future action by PG&E
3. Date Reported to Program Manager 11/29/82
4. Report submitted on behalf of RFR, Inc. (Organization)
5. Resolution based on the following documentation:

EOI-7005, Rev 0, states that Quadrex could not provide documented evidence that temperature, pressure and flooding calculations were performed for all compartments outside containment containing essential equipment.

6. Program Resolution is:

PG&E to provide objective evidence and/or response to establish adequacy of essential equipment in compartments outside containment where temperature, pressure, and flooding analyses were not performed and to assure that design changes by PG&E have not placed essential equipment into compartments where no calculations were performed by Quadrex due to the prior absence of essential equipment.

7. Signature: Fred H. Greenwood (Recommended by)  
*for R.F. Reedy*



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1. Date reported to PG&E and TES 11/29/82
2. Scheduled for RFR, Inc. (Originator) Semimonthly Report No. \_\_\_\_\_
3. Responsive to PG&E Technical Program: Task \_\_\_\_\_ (if applicable)
4. Prepared as a result of:
  - a.  QA Audit and Review Report of PG&E/RRA
  - b.  Field Inspection Deficiency
  - c.  Independent Calculation Deficiency
  - d.  Seismic Input Deficiency
  - e.  Design Methodology Deficiency
  - f.  Other Deficiency

5. Structure(s), system(s) or component(s) involved:  
Radiation dosage analyses.

6. Description of Concern:

The "cut-off" date for Phase II is 11/30/81. The RFR, Inc., Audit and Review of RRA determined that most of the dosage calculations performed prior to 11/30/81 and subject to SWEC verification had been re-done.

7. Significance of Concern:

- a. The SWEC verification may have used input from RRA that has changed since 11/30/81 and therefore, was not used in analyses for final equipment qualification.
- b. Need verification that essential equipment is qualified to new dosage levels.

8. Recommendation:

It is recommended that SWEC verify RRA dosage calculations performed after 11/30/81 for equipment currently in the SWEC equipment qualification sample and re-verify qualification of this equipment using the SWEC computed dosages.

9. Signature: *Fratt Greenwood* (Originator/Organization)  
*for R.F. Reedy*

