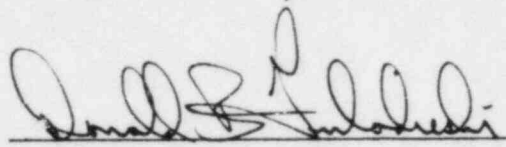


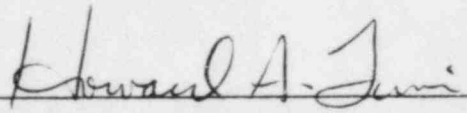
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
MONTHLY STATUS REPORT  
NUMBER 8  
PERIOD DECEMBER 1, 1983 THROUGH DECEMBER 31, 1983

Prepared by:

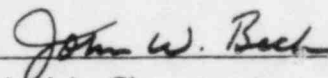
  
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Manager, Design Verification

  
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Manager, Construction Verification

Reviewed by:

  
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Project Manager

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Principal-in-Charge

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**VERIFICATION PROGRAM (IDCV)**  
**MONTHLY STATUS REPORT**  
**NUMBER 8**  
**PERIOD DECEMBER 1, 1983 THROUGH DECEMBER 31, 1983**

**1.0 INTRODUCTION AND PURPOSE**

Monthly Status Reports have been instituted by agreement among Consumers Power Company (CPC), the Nuclear Regulatory Commission (NRC) and TERA to provide parties external to TERA's IDCv project team with up-to-date information relative to program progress and any important issues identified during the reporting period. This report covers the period from December 1, 1983 through December 31, 1983. A description of the scope, reporting periods and report issuance dates for Monthly Status Reports, as well as a summary of the background of the IDCv program, were presented in the initial Monthly Status Report dated May 27, 1983.

**2.0 IDCv PROGRAM STATUS SUMMARY**

**2.1 PROGRAMMATIC ACTIVITIES**

Attachment I provides an updated chronology of major project milestones. The project chronology from inception through the beginning of this reporting period can be found in the previous monthly status reports.

The fifth OCR status meeting, originally planned for the end of December, was rescheduled to January 4 to avoid conflict with the holidays. Programmatic activities to be discussed at that meeting include clarification of the fact that the clock for the "10 day" objective for responses to confirmed items starts with the OCR meeting where the item is first discussed. The "10 day clock" is used in determining when a confirmed item may be converted into a finding. It will also be noted that written responses are not needed for confirmed items but are



required for findings. Other items regarding status of OCRs and notification of revision of calculations will also be discussed.

By letter dated December 27 the NRC advised TERA of the acceptability of Law Engineering Testing Company to perform portions of the construction verification program. The NRC also formally accepted Revision 3 of the TERA Engineering Program Plan and Revision 4 of the PQAP for the Midland IDCVP.

During December TERA developed a structural engineering evaluation of the diesel-generator building (DGB). Because of the timeliness of the issues involved, the engineering evaluation was prepared in a format for public release. This is an exception of the general IDCVP procedure of issuing only final reports and using the OCR process to identify matters requiring further reviews. In December review team members met in Ann Arbor to review DGB finite element and seismic stick models. The DGB engineering evaluation is scheduled for release on January 4.

As noted in last month's status report, consideration is being given to a possible mid-course correction of the IDCVP. TERA project and management personnel have identified alternatives for making appropriate corrections to the program. Discussions among CPC, NRC, and TERA are contemplated but none is scheduled. TERA's near term priorities have been established so as not to foreclose desirable refinements to the IDCVP.

## 2.2 DESIGN VERIFICATION ACTIVITIES

### 2.2.1 SUMMARY

The most significant activity in December was the completion of the engineering evaluation for the diesel-generator building. This evaluation is scheduled for release on January 4.



Progress continued in all other areas of the design verification review. Emphasis was placed on completion of work previously initiated and dispositioning of OCRs.

#### 2.2.2 AUXILIARY FEEDWATER SYSTEM PROGRESS

In December the AFW system review continued, as it has in November, by concentrating on the disposition of OCRs and completion of supporting engineering evaluations. Lower priority is being given to completion of other engineering evaluations. No new engineering evaluations were initiated in December.

Review of auxiliary building structural topics continued but was slowed due to personnel being assigned to the engineering evaluation for the diesel-generator building. Specific subjects where progress was made in the civil/structural area included reviews of the SMA report, channel insert design criteria and support design, and foundation design for the auxiliary building.

Completion of engineering evaluations continued as previously requested information was received and evaluated. In the electrical and mechanical review areas verification of engineering evaluations continued.

An integrated engineering evaluation plan is being developed. This plan provides a correlation between the review matrix in the Engineering Program Plan and the related engineering evaluations. The integrated plan eliminates redundant effort in completing engineering evaluations and aids in the identification of areas requiring additional review to allow appropriate conclusions to be drawn.

#### 2.2.3 STANDBY ELECTRIC POWER SYSTEM PROGRESS

The technical review of the electrical load capacity, sequencing, and shedding of the diesel generator has been completed. The results of an independent load tabulation of the diesel generator (DG) loads has been compared to the DG design rating and to the current Bechtel DG load calculation. The DG interlocks and permissives, as well as sequencer and load shed logic, were included in the





review. In particular, the primary undervoltage setpoint and the load sequencer timer accuracy were examined. The review of the power distribution system (PDS) is in progress. The draft engineering evaluation for these DG and PDS topics is scheduled for completion in January.

The evaluation of DG local operation, system interlocks, instrumentation, control systems, and actuation systems is also nearing completion, with certain aspects such as the system interlocks and ESFAS interface already completed. Some of the detailed items being reviewed include the DG pneumatic control system operability requirements and the starting air quality, as well as the 60-second coastdown interlock. The draft engineering evaluation is also scheduled for completion in January.

The draft engineering evaluation of the fire protection associated with the diesel generators has been completed. Diesel-generator building (DGB) wall penetrations and seal details were reviewed, along with fire detection system operability. Fire protection system features were examined in light of NFPA requirements. The operation of the CO<sub>2</sub> system was reviewed, including CO<sub>2</sub> room flooding capability. Room pressurization and the associated Bechtel calculations were also reviewed.

The DG combustion air supply and engine exhaust draft engineering evaluation has been completed. Intake and exhaust as-built configurations were reviewed against vendor interface requirements and Bechtel design calculations. An alternate calculation of exhaust backpressure was performed due to variances in input parameters used in the design calculation.

The technical reviews of the DG and DC System Technical Specifications and the mechanical aspects of the underground fuel oil storage tanks were completed, and draft engineering evaluations are scheduled for completion in early January. The fuel oil tank review included the effects of flooding. The draft engineering evaluation of the SEP system consolidated criteria and commitments is also scheduled for completion in January. The review of the 125 VDC system is in progress and is scheduled to be completed in January.



The review of the DGB as-built condition has been completed with the assistance of Professors N. J. Holley (MIT) and William J. Hall (University of Illinois). The IDV reviewers met as a team in Bethesda on December 16, 28, and 29 to consolidate their review process and finalize their draft report.

Review of the DGB concrete/steel design (Topic III.7-2) and foundation design (Topic III.6-2) was pursued by reviewing calculations related to the finite element analysis which is used to verify the adequacy of the design.

The engineering evaluation was completed at the end of December and the report was scheduled to be released on January 4. The engineering evaluation's primary conclusion is that the existing cracks, generally being of small size, are not indicative of a condition that would compromise the capability of the DGB in meeting its intended performance requirements. The IDV team also concluded that significant future cracking is not anticipated and the DGB is expected to remain serviceable without further remedial action. Recommendations concerning CPC's commitments to verify continued serviceability are also provided.

#### 2.2.4 CONTROL ROOM HVAC SYSTEM PROGRESS

The responses to confirmed items provided in the November 11, 1983 Bechtel letter have been reviewed and the associated OCRs are resolved.

The 20 review topics which cover the control room HVAC System Performance Requirements review area have progressed to a near completion status. For the sample initially selected:

- o Criteria and commitments have been reviewed and consolidated from the FSAR.
- o P&IDs have been reviewed.
- o Design basis combinations of events and natural phenomena have been tabulated and reviewed.
- o Layout drawings have been reviewed for mechanical considerations.



- o Calculations have been reviewed.
- o Specifications have been reviewed for functional requirements and compliance to codes and standards commitments.

Engineering evaluations are in preparation, leaving three areas to close -- OCRs, document revisions, and assessment of the sample. Structural review of the ducts and duct supports is continuing. The status of structural review of the Auxiliary Building is discussed in Section 2.2.2 of this status report.

## 2.3 CONSTRUCTION VERIFICATION ACTIVITIES

### 2.3.1 SUMMARY

Activities undertaken and events which occurred during this reporting period which are important to the overall conduct of the construction verification review portion of the IDCV program are as follows:

- o The review of vendor and project NDE procedures was completed and the results of the review documented on checklists. A summary of observations extracted from the checklists has been prepared and included in Open Items, OCR numbers O-123 and O-124. Further review is in progress to determine whether these items should be confirmed.
- o Activities of ICV reviewers during this reporting period were focused upon the dispositioning of existing OCRs and Findings. Extending the ICV reviews into new areas has been held pending completion of selected CCP Phase I activities. Recommencement of the Construction/Installation Documentation and Physical Verification Reviews is anticipated in September 1984.

### 2.3.2 CONSTRUCTION DOCUMENTATION REVIEW PROGRESS

Construction documentation review relates to those ICV review categories which are principally concerned with the adequacy and completeness of available documentation, as opposed to those ICV review categories which verify the



physical configuration of installed components and commodities. The following ICV review categories are part of construction documentation review:

- o Review of Supplier Documentation
- o Review of Storage and Maintenance Documentation
- o Review of Construction/Installation Documentation.

A description of progress made and principal activities undertaken in the above review categories is as follows:

- o ICV reviewers completed their review of selected vendor and project NDE procedures. The results of the review were documented on checklists, and the checklists were further summarized onto OCRs O-123 and O-124. Open Items O-123 and O-124 record the salient observations of the NDE procedure review and record those inconsistencies noted when NDE procedures were compared to applicable Codes and Standards. ICV reviewers continue to evaluate the significance of the noted inconsistencies.
- o ICV program management commenced collating the summaries and engineering evaluations prepared to date within each of the ICV review categories. These summaries will be prepared as an engineering evaluation for each of the ICV review categories to status each review. The evaluations so prepared would necessarily be supplemented with the evaluation of the ultimate disposition of existing Confirmed Items and Findings.

### 2.3.3 PHYSICAL VERIFICATION/SITE ACTIVITIES PROGRAM

The activities described herein address those ICV review categories which require ICV reviewers to observe, witness, or verify field activities and/or the as-built configuration of installed commodities and components. For the most part, these activities require a strong site presence on the part of reviewers and include the following review categories:

- o Review of Selected Verification Activities
- o Verification of Physical Configuration.



During this reporting period, ICV reviewers did not conduct any site activities. Near term activities for the above review categories will relate to dispositioning existing Findings and Confirmed Items. A recommencement of site verification reviews is anticipated in September subsequent to completion of selected CCP Phase I activities.

### 3.0 SUMMARY OF CONFIRMED AND RESOLVED ITEM REPORTS, FINDING REPORTS, AND FINDING RESOLUTION REPORTS

Attachment 2 provides TERA's Tracking System Summary for Open, Confirmed, and Resolved (OCR) Item Reports, Finding Reports, and Finding Resolution Reports. This tool assists TERA in tracking the disposition of issues as they progress through the review process. Items that have changed status or that have been added during the reporting period are noted with an asterisk. Attachment 2 provides retyped copies of Resolved Item Reports (that have closed out Confirmed Items), Confirmed Items, Finding Reports, and Finding Resolution Reports. Several observations are also attached. The following paragraphs discuss items which have changed status in the past month.

During December eight new Confirmed Items were identified, six potential items were resolved as observations, and two items were resolved as a result of receiving additional information.

Confirmed Items C-125, C-130, and C-131 are all concerned with the civil/structural review of the diesel-generator building. Specifically, the subjects of these items are as follows:

- C-125      Stick model and compatibility with finite element model
- C-130      Seismic force information not referenced
- C-131      Analysis method for evaluation of foundation.

Confirmed Item C-129 is related to an apparent discrepancy in the required isolation time for the control room HVAC dampers.





OCR item numbers 132 through 141 are all concerned with the review of the standby electric power (SEP) system. Items C-132 through C-135 are confirmed items in the SEP review concerned with the following subjects:

- C-132      Discrepancy between FSAR and design documents regarding undervoltage set points
- C-133      Potential loss of pneumatic controls associated with diesel-generator
- C-134      Unit 1/Unit 2 interface
- C-135      Potential inconsistency with IEEE-308-1974.

Three items in the standby electric power system review were resolved as observations. Three other items in the same system were opened, but not yet confirmed. Further review is in progress on these items.

Two other items, O-123 and O-124, were opened during December but were not confirmed. Both items related to the ICV.



ATTACHMENT I  
MIDLAND INDEPENDENT DESIGN AND  
CONSTRUCTION VERIFICATION PROGRAM

TERA PROJECT 3201

PERIOD DECEMBER 1, 1983 THROUGH DECEMBER 31, 1983

<u>Date</u>	<u>Milestone</u>
December 12-16, 1983	DGB review team members review DGB finite element and seismic stick models at Bechtel's Ann Arbor, Michigan offices.
December 16, 1983	Seventh Monthly Status Report issued.
December 27, 1983	NRC letter documenting acceptance of Revision 3 to the Engineering Program Plan, Revision 4 of the Project Quality Assurance Plan, and Law Engineering.
December 27, 1983	Meeting notice issued for January 4, 1984 OCR status review meeting.
December 30, 1983	Completion of engineering evaluation of diesel-generator building.

ATTACHMENT 2

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item/ Observation</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
001	RPS	12/21/83	3/4/83	3/4/83	7/12/83			I.4-I Tech Specs	
002	RPS	12/21/83	3/4/83	3/4/83	7/12/83			I.4-I Tech Specs	
003	RPS	1/3/83	3/4/83		3/4/83			I.8-I Overpressure Protection	
004	RPS	1/3/83	3/4/83		3/4/83			I.8-I Overpressure Protection	
005	FAD	1/4/83	3/4/83	3/4/83				I.1-I System Operating Limits	
006	RPS	1/12/83	3/4/83		3/4/83			I.2-I Acc. Anal. Consid.	
007	RPS	1/12/83	3/4/83		3/4/83			I.2-I Acc. Anal. Consid.	
008	LB	1/19/83	3/4/83		7/12/83			I.19-I Control Systems	
009	JAM	1/20/83	3/4/83		3/4/83			II.1-I Seismic Design	
010	FAD	1/20/83	3/4/83	4/14/83	7/12/83			I.10-I Hydraulic Design	
011	LB	1/27/83	3/4/83	3/4/83	8/8/83			I.19-I Control Systems	
012	LB	2/7/83	3/4/83	3/4/83		7/12/83	9/30/83	I.15-I Power Supplies	
013	RPS	2/8/83	3/4/83		7/12/83			I.5-I Syst. Align./Switchover	
014	RPS	2/8/83	3/4/83		7/12/83			I.5-I Syst. Align./Switchover	
015	JAM	2/10/83	3/4/83	10/11/83				III.1-I Seismic Design/Input to Equipment	
016	JAM	2/10/83	3/4/83					III.5-I Civil/Str. Design Consid.	
017	FAD	2/17/83	3/4/83	3/4/83	10/5/83			I.11-I Heat Removal Cap	
								I.10-I Hydraulic Design	

\* Change in Status During Reporting Period

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item/ Observation	Finding Report	Finding Resolution Report	Topic	Comments
018	FAD	2/17/83	3/4/83	3/4/83		11/11/83	11/11/83	I.11-I Heat Removal Cap.	
019	LB	2/21/83	3/4/83		8/8/83			I.18-I Instrumentation	
020	FAD	2/24/83	3/4/83	3/4/83	11/11/83			I.11-I Heat Removal Cap.	B-080 Related
								I.9-I Comp. Func. Req.	
021	FAD	2/24/83	3/4/83					II.10-I Eq. Qual.	0-21, Rev. 1, 4/14/83
022	LB	2/24/83	3/4/83	8/8/83				I.19-I Control Syst.	
023	LB	2/28/83	3/4/83		8/8/83			I.18-I Instrumentation	
								I.19-I Control	
024	RPS	3/1/83	3/4/83					I.2-I Acc. Anal. Consid.	
025	RPS	3/1/83	3/4/83	3/4/83				I.2-I Acc. Anal. Consid.	
026	FAD	3/1/83	3/4/83	11/11/83				I.8-I Overpress. Prot.	
027	FAD	3/1/83	3/4/83	3/4/83	11/11/83			I.9-I Comp. Func. Req.	
								II.9-I Env. Eng.	
028	FAD	3/2/83	3/4/83	4/14/83	11/11/83			I.9-I Comp. Func. Req.	
029	LB	2/22/83	3/4/83		3/4/83			I.18-I Instrumentation	
								I.19-I Control System	
030	LB	1/19/83	3/4/83		3/4/83			I.19-I Control System	
031	DBT	2/11/83	3/4/83	3/4/83		8/30/83		I.3-Ic Pipe Supports	C-31, Rev. 1, 7/12/83
032	DBT	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-32, Rev. 1, 7/12/83
033	DBT	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-33, Rev. 1, 7/12/83

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item/ Observation	Finding Report	Finding Resolution Report	Topic	Comments
034	DBT	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-1c Pipe Supports	C-34, Rev. 1, 7/12/83
035	DBT	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-1c Pipe Supports	C-35, Rev. 2, 7/12/83
036	JAM	2/11/83	3/4/83	3/4/83		7/12/83		II.2-1 Pressure Boundary	C-36, Rev. 2, 7/12/83
037	JAM	1/20/83	3/4/83	3/4/83	8/30/83			III.1-1 Seismic Design/Input to Equipment	
038	FAD	3/1/83	3/4/83	3/4/83				I.15-1 Power Supplies	
039	LB	3/30/83	4/14/83	8/30/83				II.10-1 Env. Eq. Qual.	
040	LB	3/8/83	4/14/83	9/30/83				I.16-1 Elec. Characteristics	
041	LB	3/25/83	4/14/83		9/30/83			I.15-1 Power Supplies	
042	LB	3/31/83	4/14/83		9/30/83			I.10-1 Env. Eq. Qual.	
043	FAD	3/15/83	4/14/83	10/6/83		12/2/83		I.10-1 System Hydraulic Design	10"-2HBD-605
044	FAD	3/15/83	4/14/83		10/6/83			II.10-1 Env. Eq. Qual.	Resolved as Observation
045	DBT	3/17/83	4/14/83	5/25/83		8/8/83	11/11/83	II.1-1C Electrical Equipment/ Storage & Maintenance	C-45, Rev. 1, 7/12/83
046	DBT	3/17/83	4/14/83	5/25/83		8/8/83	11/11/83	I.1-1C Mechanical Equipment/ Storage & Maintenance	
047	DBT	7/7/83	7/26/83	8/8/83		8/30/83		I.1-1C Mechanical Equipment/ Storage & Maintenance	C-47, Rev. 1, 8/30/83
048	FAD	7/29/83	7/29/83	8/8/83				II.10-1 Environmental Equipment Qualification	
049	RC	8/28/83	8/29/83	8/29/83		11/11/83		II.4-1c Cable	
050	RC	8/28/83	8/29/83	8/29/83		11/11/83		II.4-1c Cable	



OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item/ Observation</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
051	JAM	8/12/83	8/30/83		8/30/83			III.1-1 Seismic Design/Input to Equipment	
052	DBT	9/30/83	9/30/83	9/30/83		12/1/83		All ICV Topics for AFW	Supplier Doc
053	FEP	9/27/83	9/29/83	9/29/83		12/1/83		All ICV Topics for AFW	Const./Installation Documentation
054	FEP	9/27/83	9/29/83	9/29/83		12/1/83		All ICV Topics for AFW	Const./Installation - PQCI's
055	DBT	9/19/83	9/29/83	11/11/83		12/1/83		All ICV Topics	Const./Installation Documentation - WPs & PQRs
056	DBT	9/26/83	9/29/83	11/11/83		12/1/83		All ICV Topics for AFW & SEP	Supplier Doc. - Materials
057	DW	9/29/83	9/30/83		9/30/83			I.34-3 Pressurization	Resolved as Observation
058	DW	10/6/83	10/6/83					I.12-3 Cooling/Heating Requirements	
059	RPS	8/11/83			9/30/83			I.3-1 Single Failure I.23-1 Failure Modes & Effects	Resolved as Observation
060	DW	9/29/83	9/30/83					I.1-3 System Operating Limits	
061	DW	9/29/83			9/30/83			I.18-3 Instrumentation	Resolved as Observation
062	FAD	9/30/83	9/30/83					I.9-1 Comp. Func. Req.	
063	FAD	10/5/83			10/6/83			I.10-1 System Hydraulic Design	Resolved as Observation
064	FAD	10/5/83			10/6/83			I.10-1 System Hydraulic Design	Resolved as Observation

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item/ Observation	Finding Report	Finding Resolution Report	Topic	Comments
065	FAD	10/4/83	10/6/83					All IDV Topics	
066	DW	9/29/83	10/6/83	10/6/83	11/30/83			1.5-3 System Alignment/Switchover 1.7-3 System Isolation/Interlocks	
067	DW	9/29/83	9/30/83		9/30/83			1.34-3 Pressurization	Resolved as Observation
068	JAM	9/27/83	9/30/83	9/30/83				11.4-1 EQ/Seismic	
069	JAM	9/27/83	9/30/83	12/14/83				11.4-1 EQ/Seismic	
070	JAM	9/27/83	9/30/83		12/14/83			1.4-1 EQ/Seismic	Consolidated with C-069
071	JAM	9/27/83	9/30/83	12/14/83				111.1-1 Seismic Design/ Input to Equipment	
072	FAD	9/30/83	10/6/83					1.9-1 Comp. Func. Req. 11.2-1 Seismic Design - Pressure Boundary	
073	DW	9/29/83	10/6/83	10/6/83	11/11/83			1.12-3 Cooling/Heating Requirements	OCR-058 related
074	DW	9/29/83	10/6/83	10/6/83				1.1-3 System Operating Limits 1.2-3 Acc. Anal. Consid. 1.15-3 Power Supplies	
075	DW	9/29/83	10/6/83	10/6/83	1/6/84			1.1-3 System Operating Limits 1.2-3 Acc. Anal. Consid.	*
076	DW	9/29/83	10/6/83	10/6/83	1/6/84			1.12-3 Cooling/Heating Requirements	*
077	JAM	9/27/83	10/6/83	10/6/83				11.4-1 EQ/Seismic	
078	FAD	9/30/83	10/6/83					1.9-1 Comp. Func. Req.	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item/ Observation</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
079	JAM	8/29/83	10/6/83					III.5-1 Civil/Structural Design III.6-1 Considerations Foundations	
080	FAD	11/1/83			11/11/83			I.9-1 Comp. Func. Req.	Resolved as Observation
081	FAD	11/1/83	11/11/83	11/11/83				II.2-1 Pressure Boundary I.9-1 Comp. Func. Req.	
082	DW	10/18/83	11/11/83					I.9-3 Comp. Func. Req.	Chemical Conc./ Dow Interface
083	DW	10/31/83	11/11/83					I.2-3 Acc. Anal. Consid.	
084	DW	10/31/83	11/11/83	11/11/83				I.2-3 Acc. Anal. Consid.	
085	DW	10/31/83	11/11/83	11/11/83				All IDV Topics	Noted issues identified in CR-HVAC review
086	FAD	10/13/83			11/11/83			II.12-1 Fire Protection	Resolved as Observation
087	FAD	10/13/83	11/11/83	11/11/83				II.12-1 Fire Protection	
088	FAD	10/13/83	11/11/83	11/11/83				II.12-1 Fire Protection	
089	FAD	10/13/83	11/11/83	11/11/83				II.12-1 Fire Protection	C-089, Rev. 1 11/29/83
090	FAD	10/13/83			11/11/83			II.12-1 Fire Protection	Resolved as Observation
091	RSC	10/18/83	11/11/83	11/11/83		12/1/83		I.3-1C Pipe Supports	Overinspection Prog.

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item/ Observation	Finding Report	Finding Resolution Report	Topic	Comments
092	RSC	10/18/83	11/11/83	11/11/83				I.3-IC Pipe Supports	Overinspection Prog.
093	DBT	11/10/83	11/21/83	11/28/83				IV.2-3C Const. Doc. Review	HVAC Ducts
094	LBT	11/10/83	11/21/83	11/28/83				IV.2-3C Physical Verif.	HVAC Ducts
095	DBT	11/10/83	11/21/83	11/28/83				IV.2-3C Const. Doc. Review	HVAC Welding Docs
096	DBT	11/10/83	11/11/83	11/28/83				IV.2-3C Const. Doc. Review	HVAC Ducts and supports
097	LDB	11/30/83	12/5/83	12/9/83				I.3-3 I.5-3 Single Failure System Alignment	
098	DMW	11/7/83	12/5/83					III.1-1 Seismic Design	RG 1.92
099	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Slab Rotation
100	JAM	12/9/83			12/9/83			III.1-1 Seismic Design	Resolved as Observations
101	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	DQ-38(Q)
102	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Computer Input
103	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	
104	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Moment of Inertia Calc
105	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Program CE-207
106	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Soil Structure Interaction
107	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Stick Model Assumptions
108	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Stick Model Input

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item/ Observation</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
109	LDB	12/1/83	12/6/83	12/14/83				1.19-2 DG Control	Fuel Lockout
110	LDB	12/1/83	12/6/83	12/14/83				1.24-2 DG Load Capacity	Load Tabulation
111	GES	12/2/83	12/6/83	12/14/83				1.24-2 DG Load Capacity	Undervoltage
112	GES	12/9/83	12/14/83	12/14/83				1.30-2 DG Exhaust	
113	JAM	11/3/83	11/7/83	12/14/83				111.7-1 Conc/steel design	
114	JAM	11/3/83	11/7/83	12/14/83				111.7-1 Conc/steel design	
115	JAM	11/10/83	11/10/83	12/14/83				111.7-1 Conc/steel design	
116	JAM	11/10/83	11/10/83	12/14/83				111.7-1 Conc/steel design	
117	JAM	10/31/83	11/10/83	12/14/83				111.6-1 Foundations 111.7-1 Conc/steel design	
118	JAM	10/31/83			12/14/83			111.6-1 Foundations	
119	JAM	10/5/83	11/14/83	12/14/83				11.4-1 Seismic Qual.	
120	JAM	10/26/83	11/14/83	12/14/83				11.4-1 Seismic Qual.	
121	JAM	10/26/83	11/14/83	12/14/83				11.4-1 Seismic Qual.	
122	JAM	10/26/83	11/14/83	12/14/83				11.4-1 Seismic Qual.	
123	DBT	12/20/83	12/28/83					Various ICV topics	*
124	DBT	12/20/83	12/28/83					Various ICV topics	*
125	JAM	12/30/83	1/6/84	1/6/84				111.1-2 Seismic Design	*Stick Model
126	DMW	12/19/83			1/6/84			1.2-3 Acc. Anal. Consid.	*Air Inleakage
127	DMW	12/20/83			1/6/84			1.9.3 Comp. Func. Req.	*Resolved as Observation



OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM  
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
1/13/84 (continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item/ Observation</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
128	DMW	12/20/83			1/6/84			1.35-3 Ventilation	*Resolved as Observation
129	DMW	12/30/83	1/6/84	1/6/84				1.9-3 Comp. Func. Req.	*Damper Isolation Time
130	JAM	12/20/83	1/6/84	1/6/84				111.7-2 Conc/steel design	*Source of Seismic Forces
131	JAM	12/20/83	1/6/84	1/6/84				111.6-2 Foundations 111.7-2 Conc/steel design	*Footing Strips
132	GES	12/9/83	1/6/84	1/6/84				1.26-2 Electrical Load Shedding	*Under-Voltage Setpoints
133	GES	12/21/83	1/6/84	1/6/84				1.19-2 DG Control	*Pneumatic Control
134	GES	12/29/83	1/6/84	1/6/84				1.7-2 Interlocks	*Cross-unit Interface
135	GES	12/29/83	1/6/84	1/6/84				1.7-2 Interlocks	*IEEE 308
136	GES	12/29/83			1/6/84			1.7-2 Interlocks	*Resolved as Observation
137	GES	12/29/83			1/6/84			1.7-2 Interlocks	*Resolved as Observation
138	GES	12/29/83			1/6/84			1.7-2 Interlocks	*Resolved as Observation
139	GES	12/9/83	1/6/84					1.25-2 DG Load Sequencing	*
140	GES	12/15/83	1/6/84					111.8-2 Oil Tanks	*
141	GES	12/23/83	1/6/84					1.19-2 DG Controls	*

ATTACHMENT 3

CURRENT PERIOD CONFIRMED AND  
RESOLVED ITEM REPORTS, FINDING REPORTS,  
AND FINDING RESOLUTION REPORTS

B-84-07



TERA CORPORATION

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-006  
DOC NO. 3201-006 -R-075  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 9/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 9/30/83  
PRINCIPAL-IN-CHARGE 10/12/83 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Control Room HVAC System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Review Topics I.1-3 and I.2-3 Criteria Review System Operating Limits and  
Accident Analysis Considerations

DESCRIPTION OF CONCERN:

Regulatory Guide 1.78 Item 10 of the Reg. Position requires that a 10 CFM  
inleakage be considered even for pressurized control rooms. Appendix 3A states  
compliance with the intent of Reg. Guide 1.78. It is not clear that the 10 CFM  
inleakage is considered. A statement of the basis for assumed inleakage and the  
justification for that basis should be provided.

SIGNIFICANCE OF CONCERN:

The habitability requirements for the control room may not be satisfied for  
continuous release if a 10 CFM inleakage occurred.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:

The referenced letter addresses the concern. A two-door vestibule is an adequate  
basis for eliminating significant inleakage. The vestibule, in combination with  
adequate administrative controls, will satisfy the intent of the Regulatory Guide.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

Bechtel letter to Consumers Power BLC-18457, dated 11/11/83

SIGNATURE(S):

[Signature]  
OCR ITEM REPORT  
ORIGINATOR

12/29/83  
DATE

[Signature]  
LTR

12/29/83  
DATE

HAL  
PROJECT MANAGER  
FOR PROJECT TEAM

1/6/84  
DATE

JWB  
PRINCIPAL-  
IN-CHARGE

1/12/84  
DATE

SRT (IF REQUIRED)

DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-R-076  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 9/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 9/30/83  
PRINCIPAL-IN-CHARGE 10/12/83 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Control Room HVAC - Air Handling Unit Cooling Coils

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Review Topic 1.12-3 Cooling/Heating Requirements

DESCRIPTION OF CONCERN: Certain data are used in the calculation without clear reference to a data source which is controlled. Without such reference, the validity of the data is in question, specifically:

- Makeup flow = 2000 CFM references FSAR 9.4.1.2.3 without identifying calculational backup and the FSAR discusses only normal operation, not LOCA after 3 hours isolation
- Aux Bldg Temp = 104°F no references
- Makeup Air Temp = 96°F FDB no references  
79°F FWB

SIGNIFICANCE OF CONCERN:

Although the data appears reasonable, it is necessary to trace the data to a controlled source in order to check the basis for the values used. For example, the makeup air conditions appear to be close to a 1% design basis from the ASHRAE Guide. This should be confirmed and the reason for using 1% conditions stated. To complete the assessment of the design, this type of information is required. The adequacy of this data could affect the ability of the system to maintain control room temperatures.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X :

The referenced letter addresses the concern. Although not specifically identified in the calculation, the data is based on controlled data sources or published data in common use. This confirms the adequacy for use in the calculation.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

- Calculation No. CPM 4321-01 (Q), Rev. 2
- Bechtel letter to Consumers Power BLC-18457, dated 11/11/83

SIGNATURE(S):

[Signature]  
OCR ITEM REPORT  
ORIGINATOR

12/29/83  
DATE

[Signature]  
LTR

12/29/83  
DATE

HAI  
PROJECT MANAGER  
FOR PROJECT TEAM

1/6/84  
DATE

JWB  
PRINCIPAL-  
IN-CHARGE

1/12/84  
DATE

SRT (IF REQUIRED)

\_\_\_\_\_  
DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED   X    
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-125  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/30/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/10/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

SEP - Diesel Generator Building

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

III.1-2 Seismic Design/Input to Equipment

DESCRIPTION OF CONCERN:

1. No justification for ignoring the south wall openings in the development of the stick model properties.
2. No compatibility study between stick and finite element models.

SIGNIFICANCE OF CONCERN:

The two models may not be compatible in terms of equilibrium and deflection.

RECOMMENDATION   X   OR RESOLUTION \_\_\_\_\_


Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

Calculation SQ-147(Q)

SIGNATURE(S):

CPH 	JAM _____	HAL _____	JWB _____	_____
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/30/83</u>	<u>1/4/84</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE



**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED X ITEM

FILE NO. 3201-008  
DOC NO. 3201-008-B-126  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/19/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Control Room HVAC

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
Review Topic I.2-3 Accident Analysis Considerations  
Calculations Review

DESCRIPTION OF CONCERN:

FSAR Section 6.4.2.3 states, "The toxic gas protection analysis, however, assumes a conservative inleakage of 82 cfm." The plant conditions under which this inleakage might occur are not identified. A review of calculations which address the toxic gas protection has been conducted and these calculations do not include an analysis of an 82 cfm inleakage. The concern is that under some plant conditions, significant inleakage is feasible and the toxic effects have not been addressed in an analysis.

SIGNIFICANCE OF CONCERN:

Control room habitability could potentially be jeopardized.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X :

This item is resolved by classification as an Observation. The statements made in the FSAR are outdated. Inleakage is taken to be zero, as indicated in the resolution of OCR 3201-008-075. There are no adverse technical consequences, but the FSAR should be updated.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

SIGNATURE(S):

DMW [Signature]  
OCR ITEM REPORT  
ORIGINATOR

12/19/83  
DATE

DMW [Signature]  
LTR

12/19/83  
DATE

HAL  
PROJECT MANAGER  
FOR PROJECT TEAM

1/6/84  
DATE

JWB  
PRINCIPAL-  
IN-CHARGE

1/12/84  
DATE

SRT (IF REQUIRED)

DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-B-127  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/20/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CFC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Control Room HVAC Air Handling Unit OVM-01 A & B

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.9-3 Component Functional Requirements

DESCRIPTION OF CONCERN:

Sheet 14 of the referenced calculation states as a conclusion, "Change fan motor from 30 H.P. to 40 H.P." The referenced specification includes the higher system total pressure of 5.5 in. w.g., which led to the above statement, but the motor H.P. is still 30. The concern is whether adequate driver H.P. is specified to meet flow requirements.

SIGNIFICANCE OF CONCERN:

If motor H.P. were inadequate, the design basis flow could not be obtained; however, a simple calculation of fan power performed by the reviewer indicates 30 H.P. is adequate. The Bechtel calculation was just conservative in its conclusion.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:

This item is resolved by classification as an observation based on the fact that the design requirement was adequately addressed.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

Calculation FM-4321-9(Q)  
Specification 7220-M-149(Q)

SIGNATURE(S):

DMW [Signature]  
OCR ITEM REPORT  
ORIGINATOR

DMW [Signature]  
LTR

HAL \_\_\_\_\_  
PROJECT MANAGER  
FOR PROJECT TEAM

JWB \_\_\_\_\_  
PRINCIPAL-  
IN-CHARGE

SRT (IF REQUIRED)

12/20/83  
DATE

12/20/83  
DATE

1/6/84  
DATE

1/12/84  
DATE

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DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-B-128  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/20/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Control Room HVAC Air Handling Unit OVM-1

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.35-3 Ventilation - Calculation Review

DESCRIPTION OF CONCERN:

The balance of the system requires that the static pressure drop in the return air duct exceed that in the fresh air duct by  $\frac{1}{4}$ " WG to pressurize the control room. The values calculated are 0.82" WG and 0.62" WG respectively. To be conservative, the fan sizing should have been based on  $(0.62 + .25)$  instead of 0.82.

SIGNIFICANCE OF CONCERN:

Although the method was slightly in error, the consequences are not significant, because 0.05" WG is within the accuracy of the calculation. When the actual system is balanced, it will be important to understand the flaw in the method, to ensure that the correct control room pressurization is established.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_

This item is resolved by classification as an "Observation." There is no physical consequence associated with the observation and the calculation is being revised for other reasons.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

Calculation FM-4321-9(Q) Rev. 4

SIGNATURE(S):

DMW [Signature]  
OCR ITEM REPORT  
ORIGINATOR

12/20/83

DATE

DMW [Signature]  
LTR

12/20/83

DATE

HAL \_\_\_\_\_  
PROJECT MANAGER  
FOR PROJECT TEAM

1/6/84

DATE

JWB \_\_\_\_\_  
PRINCIPAL-  
IN-CHARGE

1/12/84

DATE

SRT (IF REQUIRED)

DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X \_\_\_\_\_  
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008 -C-129  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/30/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/6/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

**STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:**

Control Room HVAC  
Hazardous Gas Monitoring System

**IDCV PROGRAM AREA OR TASK (IF APPLICABLE):**

Component Functional Requirements Topic I.9-3

**DESCRIPTION OF CONCERN:**

See Attached

**SIGNIFICANCE OF CONCERN:**

There is a potential that the hazardous gas monitoring system would not detect the presence of certain gases fast enough to meet the design bases for the system. This might result in concentrations in excess of tolerable limits.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

**COMMENTS BY SRT (IF REQUIRED):**

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**

1. Specification 7220-J-281(Q) Rev. 5
2. Specification 7220-M-154(Q) Rev. 9
3. Bechtel calculation FM 0505-56(Q) Rev. 0

**SIGNATURE(S):**

DMW <u>[Signature]</u>	DMW <u>[Signature]</u>	HAL <u>[Signature]</u>	JWR <u>[Signature]</u>	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/30/83</u>	<u>12/30/83</u>	<u>1/6/84</u>	<u>1/12/84</u>	
DATE	DATE	DATE	DATE	DATE

## ATTACHMENT TO OCR ITEM REPORT:

Description of Concern

Reference 1 lists concentrations for various chemicals in Appendix A at which isolation should be initiated (within 4 seconds), given a sudden increase from zero to the stated concentration. Reference 2 requires that the control room HVAC isolation dampers (OMO 6501 A & B and OMO 6502 A & B) isolate in 3 seconds. This means that after detecting the sudden increase in hazardous gas, isolation occurs 7 seconds after reaching the concentrations listed in Appendix A. Reference 3 determines the required sensitivity for hazardous gas detection for 5 second and 7 second isolation times.

The 7 second values for required sensitivity should, therefore, be specified; but some of the values correspond more closely to the 5 second values. Bromine and hydrogen bromide are additionally allowed in the specification to respond in 16 seconds and 5 seconds, respectively, without adjustment to the required sensitivity. (See Note 1 in Appendix A - Ref. 1)

Two of the chemicals, sulfur trioxide and ethylene oxide, listed in the calculation (Ref. 3) are not included in Appendix A (Ref. 1). They are included in Appendix D, Table 1 (Ref. 1). This table lists gases which are sampled less frequently because they are a lower priority. The basis for establishing these in the second level of testing priority is not identified.

A third level of sampling is provided in Table 2 of Appendix D (Ref. 1). In the description to the table, a statement is made that the isolation dampers close in 2 seconds. The specification (Ref. 2) calls for 3 seconds.

On page 10 of Ref. 1, paragraph 6.1.2(b), reference is made to Appendix A. It appears this should be Appendix D.

The concern raised by the review of the specifications is that the specifications are not consistent with the calculation and may result in unacceptably high toxic gas concentrations inside the control room.





**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X  
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-130  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/30/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:  
SEP - System, Diesel Generator Building

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
III.7-2 Structural: Concrete/Steel Design

**DESCRIPTION OF CONCERN:**

The seismic force values used in the referenced calculation have not been obtained within that calculation, neither is any reference given about how and where they were obtained.

**SIGNIFICANCE OF CONCERN:**

Correctness of the seismic force values used could not be verified.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Reference should be made to the source of the seismic force values used.

**COMMENTS BY SRT (IF REQUIRED):**

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**

Calculation DQ-52.0(Q), Rev. 2, p. 74

**SIGNATURE(S):**

JKA                       
OCR ITEM REPORT  
ORIGINATOR  
12/20/83  
DATE

JAM                       
LTR  
1/4/84  
DATE

HAL                       
PROJECT MANAGER  
FOR PROJECT TEAM  
1/6/84  
DATE

JWB                       
PRINCIPAL-  
IN-CHARGE  
1/12/84  
DATE

                      
SRT (IF REQUIRED)  
                      
DATE



**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X \_\_\_\_\_  
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-131  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/30/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

SEP - System, Diesel Generator Building

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

III.6-2 Structural: Foundations  
III.7-2 Structural: Concrete/Steel Design

DESCRIPTION OF CONCERN:

In the evaluation of foundation footing strips of the north-south walls, the conclusion of the insignificance of the moments about vertical axis is based on method of analysis (i.e., check of no sliding of foundation) which may not be appropriate. The elastic deformation of footing strip and soil without relative sliding is ignored.

SIGNIFICANCE OF CONCERN:

High moments about the vertical axis in the north-south wall footing strips as obtained in the finite element analysis may not be as unrealistic as claimed in the referenced calculation. Therefore, the evaluation of these footings may be non-conservative and may underestimate the stresses.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

Calculation DQ-52.0(Q), Rev. 2 (pp. 120-125)

SIGNATURE(S):

JKA  
OCR ITEM REPORT  
ORIGINATOR

12/20/83  
DATE

JAM  
LTR

1/4/84  
DATE

HAL  
PROJECT MANAGER  
FOR PROJECT TEAM

1/6/84  
DATE

JWB  
PRINCIPAL-  
IN-CHARGE

1/12/84  
DATE

SRT (IF REQUIRED)

\_\_\_\_\_  
DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X  
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-132  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/12/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

**STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:**

Standby Electric Power - 4.16 KV Load Shed

**IDCV PROGRAM AREA OR TASK (IF APPLICABLE):**

Topic I.26-2 - 4.16KV Load Shed

**DESCRIPTION OF CONCERN:**

Drawings J-878, Sh-1, Rev. 3 (4.16KV Load Shed Logic Diagram) and E-75, Sh-4, Rev. 6 (4.16KV Load Shed Schematic Diagram) do not reflect the primary undervoltage setpoint specified in FSAR Table 2.3-2, Sh-2, Rev. 47.

**SIGNIFICANCE OF CONCERN:**

Load shed sequence may inadvertently initiate during bus transfer from station aux. transformer to startup transformer, since the ESF undervoltage relay setpoints are specified at 60% instantaneously instead of 59% with a 0.7 second time delay.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

**COMMENTS BY SRT (IF REQUIRED):**

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**

See description plus FSAR 8.3.1.1.3, Load Shedding Circuits

**SIGNATURE(S):**

GR _____	GES _____	HAL _____	JWB _____	_____
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/9/83</u>	<u>12/12/83</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X \_\_\_\_\_  
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-133  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/23/83 SRY \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Standby Electric Power: Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.19-2 DG Control System (Pneumatic)

DESCRIPTION OF CONCERN:

The DG pneumatic control system is supplied air from the starting air system. The DG starting air compressors are on a non-class IE bus and are load shed upon loss of offsite power. Neither section 5.1.6 (starting air system) nor section 5.2.3 (control systems) of material requisition M-18(Q), Rev. 9, specify control system operability requirements.

SIGNIFICANCE OF CONCERN:

Potential loss of both DGs due to loss of air subsequent to load shed. At 45 PSI of air, the low lube oil trip switches (2 out of 3 required) will operate and trip generator breaker and lock it out.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

IEEE 387-1977, Section 5.1.2(1)  
IEEE 323-1974, Section 6.2(1)

SIGNATURE(S):

GR	GES	HAL	JWB	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/21/83</u>	<u>12/23/83</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED X  
RESOLVED \_\_\_\_\_ ITEM

FILE NO. 3201-008  
DOC NO. 3201-008-C-134  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

**STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:**

Standby Electric Power - LOP Sequencer

**IDCV PROGRAM AREA OR TASK (IF APPLICABLE):**

Topic I.7-2 System Interlocks

**DESCRIPTION OF CONCERN:**

A Unit 1 ESF 4KV bus undervoltage initiates the Unit 2 LOP sequencer. The Unit 2 BOP ESFAS logic diagrams (J-299, Sh-5, Rev. 7, and Sh-7, Rev. 9) do not reflect this input.

**SIGNIFICANCE OF CONCERN:**

This cross unit interface must be evaluated to determine acceptability of separation and single failure concerns and to demonstrate compliance with GDC 5.

RECOMMENDATION X OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

**COMMENTS BY SRT (IF REQUIRED):**

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**

None found.

**SIGNATURE(S):**

GR _____	GES _____	HAL _____	JWB _____	_____
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/29/83</u>	<u>12/29/83</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED   X    
RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-C-135  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 12/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/4/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

**STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:**

Standby Electric Power - Diesel Generator

**IDCV PROGRAM AREA OR TASK (IF APPLICABLE):**

Topic I.7-2 - System Interlocks

**DESCRIPTION OF CONCERN:**

Diesel generator lockout blocks closure of ESF 4KV offsite incoming breaker. This design appears to be inconsistent with IEEE 308-1974.

**SIGNIFICANCE OF CONCERN:**

Engine malfunctions can block the restoration of offsite power even though no faults occurred on the associated bus. Thus, the preferred power supply is prevented from powering the ESF bus if it is available after engine malfunction lockout. Automatic controls do not select the most suitable power supply.

RECOMMENDATION   X   OR RESOLUTION \_\_\_\_\_:

Process per PQAP.

**COMMENTS BY SRT (IF REQUIRED):**

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**

IEEE 308-1974, Sections 5.2.1(3), 5.2.3(4), 5.2.5(1)

**SIGNATURE(S):**

<u>GR</u> OCR ITEM REPORT ORIGINATOR <u>12/29/83</u> DATE	<u>GES</u> LTR <u>12/29/83</u> DATE	<u>HAL</u> PROJECT MANAGER FOR PROJECT TEAM <u>1/6/84</u> DATE	<u>JWB</u> PRINCIPAL- IN-CHARGE <u>1/12/84</u> DATE	 SRT (IF REQUIRED)  <u>                    </u> DATE
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**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008 -B-136  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 1/6/84 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/6/84  
PRINCIPAL-IN-CHARGE 1/11/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Standby Electric Power - Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.7-2 System Interlocks

DESCRIPTION OF CONCERN:

Vendor device number PS-33B7 is identified as 1PSH-9620A1 on dwg E-81, sh 1, rev. 3, and as 1PSH-9611A14 on dwg E-402, sh 4A, rev. 0.

SIGNIFICANCE OF CONCERN:

No technical concern - documentation problem.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:

This item is resolved by classification as an observation. Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

See above.

SIGNATURE(S):

<u>GR</u> OCR ITEM REPORT ORIGINATOR <u>12/29/83</u> DATE	<u>GES</u> LTR <u>1/6/84</u> DATE	<u>HAL</u> PROJECT MANAGER FOR PROJECT TEAM <u>1/6/84</u> DATE	<u>JWB</u> PRINCIPAL- IN-CHARGE <u>1/12/84</u> DATE	_____ SRT (IF REQUIRED) _____ DATE
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**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED \_\_\_\_\_ ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008 -B-137  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 1/6/84 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/6/84  
PRINCIPAL-IN-CHARGE 1/12/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Standby Electric Power - Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.7-2 System Interlocks

DESCRIPTION OF CONCERN:

The control room does not have the capability for automatic versus manual mode selection of diesel generator frequency control, as stated in the FSAR.

SIGNIFICANCE OF CONCERN:

FSAR statement incorrect.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:

Process per PQAP as an observation.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

FSAR 8.3.1.1.3 (I&C)

SIGNATURE(S):

GR _____	GES _____	HAL _____	JWB _____	_____
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/29/83</u>	<u>1/6/84</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

TYPE OF REPORT: OPEN \_\_\_\_\_ CONFIRMED \_\_\_\_\_  
Observation X RESOLVED X ITEM \_\_\_\_\_

FILE NO. 3201-008  
DOC NO. 3201-008-B-138  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 1/6/84 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 1/6/84  
PRINCIPAL IN-CHARGE 1/12/84 CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:

Standby Electric Power - Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.7-2 System Interlocks

DESCRIPTION OF CONCERN:

Drawings E-81, sh 1, rev. 3; and E-402, sh 4A, rev. 0, illustrate pressure switches S-27B closing on increasing pressure, PS-33B7 closing on decreasing pressure, and PS-14B opening on decreasing pressure; whereas the DG instruction manual M18-373-5 shows PS-27B closing on decreasing pressure, PS-33B7 closing on increasing pressure, and PS-14B closing on decreasing pressure.

SIGNIFICANCE OF CONCERN:

May result in confusion in the preparation of calibration and surveillance procedures.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:

This item is resolved by classification as an observation. Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):

See above.

SIGNATURE(S):

GR	GES	HAL	JWB	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>12/29/83</u>	<u>1/6/84</u>	<u>1/6/84</u>	<u>1/12/84</u>	_____
DATE	DATE	DATE	DATE	DATE