

MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
MONTHLY STATUS REPORT
NUMBER 10
PERIOD FEBRUARY 1, 1984 THROUGH FEBRUARY 29, 1984

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MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION
VERIFICATION PROGRAM (IDCV)
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1.0 INTRODUCTION AND PURPOSE

Monthly Status Reports have been instituted by agreement between the 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 February 1, 1984 through February 29, 1984. 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. Several milestones warrant special highlight.

On February 10, 1984, TERA issued a letter that discusses plans for completion of the Midland IDCVP. A summary was included in the ninth Monthly Status Report. TERA proposed to include this item as a topic for discussion at the

regularly scheduled public OCR Status Review Meeting which was to be held on February 29, 1984; however, the NRC requested a postponement of this discussion until March 13, 1984. The NRC's request was made as a result of another request by the Government Accountability Project (GAP) to hold the meeting in Bethesda, Maryland. Accordingly, the March 13, 1984, meeting was noticed on February 27, 1984.

The seventh OCR Status Review Meeting was held as scheduled on February 29, 1984, at Bechtel's Ann Arbor, Michigan, offices. Representatives from TERA, CPC, Bechtel, and the NRC participated at the meeting.

2.2 Design Verification Activities

2.2.1 Summary

During February, emphasis was placed on dispositioning of OCRs and completion of previously initiated work while also initiating new tasks where appropriate. Work was begun on reports covering the system performance requirements for the AFW and CR-HVAC systems.

2.2.2 Auxiliary Feedwater System Progress

Work on a report covering AFW system performance topics was reinitiated during February. A preliminary draft was complete at the end of February and will be finalized as OCRs are dispositioned and engineering evaluations are completed. Engineering evaluations for nearly all AFW topics have been initiated, although some remain only partially complete because of the need for additional information or responses to OCRs.

OCRs which were resolved or otherwise dispositioned are discussed in Section 3.0 of this report.

In the civil/structural area, progress was made in the disposition of OCRs as the project submitted additional information in anticipation of the March 1 meeting to review these OCRs. All engineering evaluations in the civil/structural area have been initiated but remain incomplete pending resolution of OCRs.

2.2.3 SEP System Progress

Dispositioning of OCRs continued to progress in February, with additional information received to address some potential load discrepancies for OCR C-110. A meeting was held with Bechtel mechanical personnel to receive a briefing on the new calculation on DG exhaust backpressure, prior to its release to TERA for OCR C-112, and to discuss information required to address OCR C-133 on the DG pneumatic control system operability requirements.

Written responses have been received for the following OCR items and are being reviewed and evaluated:

<u>OCR No.</u>	<u>Item</u>	<u>Bechtel Letter Date</u>
C-109	Override of 60-sec coastdown interlock	1/25/84
C-111	Battery charger capability criteria	2/25/84
C-132	Undervoltage relay setpoints	1/8/84
C-134	U-1 to U-2 interlock to LOP sequencer	2/24/84
C-135	DG lockout of incoming 4-kV breaker	1/8/84

Draft engineering evaluations covering diesel generator local operation and instrumentation have been completed, and those for DG electrical loads sequencing and shedding have been modified to include the power distribution system. The technical review of the DG and PDS electrical characteristics and protective devices/settings is in progress, as is the review of the PDS cable sizing/routing/separation. The technical review of the 120 Vac and 125 Vdc power systems is progressing, and awaiting receipt of additional requested information.

Internal review of the draft engineering evaluations is continuing, and engineering evaluations are being updated to reflect OCR dispositioning.

Although the primary emphasis in the civil/structural review areas for the SEP system was on disposition of OCRs, efforts continued in the preparation of engineering evaluations. As of the end of February, reviews had been initiated in all civil/structural review areas for SEP. Progress on OCRs continued as additional information was received. This information was reviewed in anticipation of the March 1 meeting on civil/structural OCRs.

2.2.4 Control Room HVAC System Progress

The documentation of engineering evaluations is continuing, with the completion of all major system performance topics scheduled for March. To facilitate completion, the major effort has been directed to final dispositioning of outstanding OCRs. Based on information received and reviewed during the week of February 27, 1984, in conjunction with the OCR meeting, there are three of the 21 OCRs which require additional review efforts. The other 18 have been or will be dispositioned by the first week of March. Of the current OCRs remaining, sufficient documentation has been assembled to confirm or resolve two in early March. OCR 3201-008-085 requires a more extensive evaluation, which has been initiated. This OCR addresses an item which need not be dispositioned to issue the report covering performance topics. The system performance report was initiated in late February.

The status of the structural review of the Auxiliary Building, which houses the HVAC system components, is discussed in Section 2.2.2 of this report.

2.3 Construction Verification Activities

During this reporting period, ICV reviewers continued to status existing Confirmed Items and Findings. These activities included the review and evaluation of responses received from Bechtel and CPC, in addition to meetings held for the purpose of acquiring supplemental information and the clarification of concerns expressed by the OCR or Finding. Principal activities were as follows:

- Meetings were held with cognizant Midland site personnel on Wednesday and Thursday, February 22 and 23, 1984. The initial intent of the site visit was to witness the disassembly, refurbishment, and reassembly of the AFW pumps as a follow-up activity to Resolved Finding Z-046, which concerned itself with storage and maintenance activities on the pumps. This activity, however, was postponed until early summer. While at the site, the following was accomplished:

- Discussions were held with CPC MPQAD personnel responsible for the control and conduct of the Quality Verification Program (QVP). The intent of the discussions was to solicit information concerning the organizations, key individuals, and the procedures and plans which will play an important role in QVP execution. As a result of the discussions, CPC committed to forwarding the Quality Verification Program Document and applicable procedures. These documents were subsequently received by TERA with CPC's letter of March 6, 1984. ICV reviewers have commenced their initial review of the procedures and plan.
 - Discussions were held with Bechtel personnel responsible for site storage and maintenance activities. The purpose of the meeting was to status the approval of the revised site storage and maintenance procedure. TERA's review of the procedure is instrumental to the disposition of Finding F-047. As of the meeting, procedure FPG 5.000 had not been approved for implementation.
 - Other activities undertaken at the site related to the review and verification of selected documentation referenced by Bechtel and CPC in their responses to Findings F-056, Material Selection; F-047, Storage and Maintenance; and F-052, Vendor Documentation Submittals.
- During the reporting period, TERA received responses from Bechtel and CPC addressing the following Confirmed Items/Findings. TERA reviewers are in the final process of establishing a final disposition based upon the responses or have initiated requests for additional information necessary to clarify the response.

F-047: Storage and Maintenance
 F-052: Vendor Documentation Submittals
 F-091: Lesson Plan for Training of QC Inspectors

F-092: Qualification Program for QC Inspectors
C-093 thru C-096: CR-HVAC System Documentation and
Physical Verification

3.0 SUMMARY OF CONFIRMED AND RESOLVED ITEM REPORTS, FINDINGS 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 3 provides retyped copies of current period 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 February, a new Finding and two new Confirmed Items were identified. A previous Finding, four previous Open Items and twelve previous Confirmed Items were resolved. Additionally, three Observations were identified. No open items were identified. Accordingly, the status of disposition of OCRs/Findings for the IDCVP from inception through March 16, 1984, can be summarized as follows:

<u>OCR/FINDING</u>	<u>Identified</u>	<u>Active</u>
Potential Oper. Items	159	0
Open Items	136	12
Confirmed Items	99	47
Findings	21	12
Resolved Items	53	
Finding Resolution	9	
Observations	26	

Finding F-015 is concerned with additional seismic response amplification that is associated with the flexibility of floors in the auxiliary building. The effect of floor flexibility was intentionally omitted from the design analyses using a

Bechtel study as a basis. TERA has reviewed this study as well as one performed by SMA as part of their Seismic Margins Evaluation of the Midland plant. On the basis of these studies, it has been concluded that the predicted seismic response is higher than specified by the project for input into the design of components/piping.

- * Finding Resolution Report Z-043 provides close-out for an item that is concerned with the classification of a piping line as "hanger critical." Lines classified as such receive prescribed inspections even though non-Q. For the case in question, the project clarified an apparent conflict between a statement in spec M-480 where the line was not identified as hanger critical and statements made by project personnel indicating that it was. Another document, a P-129 form is considered controlling as codified by a change to spec M-327. Based upon this change, the Finding was resolved.

Confirmed Item C-156 is concerned with the design of embedded channels and plates to which piping and miscellaneous components are attached. A specific situation has been identified where design criteria may not be met.

Confirmed Item C-157 identifies an error in the transfer of a mass moment of inertia to the center of gravity of the auxiliary building foundation. The calculation in question was completed in response to another Confirmed Item C-104.

ATTACHMENT I

MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

TERA PROJECT 3201

PERIOD FEBRUARY 1, 1984 THROUGH FEBRUARY 29, 1984

<u>Date</u>	<u>Milestone</u>
February 1, 1984	Sixth OCR Status Review meeting held at Bechtel's Ann Arbor, Michigan offices
February 10, 1984	TERA issues letter to NRC and CPC describing plans for completion of the Midland IDCVP
February 15, 1984	Ninth Monthly Status Report issued
February 21, 1984	Meeting notice issued for seventh OCR Status Review Meeting and Civil/Structural Review Meeting to be held February 29, 1984, and March 1, 1984, respectively
February 22-23, 1984	ICV reviewers on site acquiring additional information required to disposition outstanding OCR's and Findings
February 24, 1984	Meeting notice issued for a meeting to discuss plans for completion of the Midland IDCVP as summarized in TERA's February 10, 1984, letter
February 28, 1984	Meeting summary issued for Sixth OCR Status Review Meeting
February 29, 1984	Seventh OCR Status Review Meeting held at Bechtel's Ann Arbor, Michigan, offices
March 1, 1984	Civil/Structural review meeting held at Bechtel's Ann Arbor, Michigan, offices

ATTACHMENT 2

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

3/16/84

<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	

* Change in Status During Reporting Period

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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		3/15/84		III.1-I Seismic Design/Input to Equipment	*
016	JAM	2/10/83	3/4/83		2/13/84			III.5-I Civil/Str. Design Consid.	
017	FAD	2/17/83	3/4/83	3/4/83	10/5/83			I.II-I Heat Removal Cap	
018	FAD	2/17/83	3/4/83	3/4/83		11/11/83	11/11/83	I.I0-I Hydraulic Design I.II-I Heat Removal Cap.	
019	LB	2/21/83	3/4/83		8/8/83			I.I8-I Instrumentation	
020	FAD	2/24/83	3/4/83	3/4/83	11/11/83			I.II-I Heat Removal Cap. I.9-I Comp. Func. Req.	B-080 Related
021	FAD	2/24/83	3/4/83					II.I0-I Eq. Qual.	0-21, Rev. 1, 4/14/83
022	LB	2/24/83	3/4/83	8/8/83				I.I9-I Control Syst.	
023	LB	2/28/83	3/4/83		8/8/83			I.I8-I Instrumentation I.I9-I Control	
024	RPS	3/1/83	3/4/83		2/13/84			I.2-I Acc. Anal. Consid.	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (continued)

<u>OCR No.</u>	<u>Resn. 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>
025	RPS	3/1/83	3/4/83	3/4/83	2/13/84			I.2-I Acc. Anal. Consid.	*
026	FAD	3/1/83	3/4/83	11/11/83	3/5/84		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
034	DBT	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic 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-Ic 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-I Pressure Boundary	C-36, Rev. 2, 7/12/83

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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				9.1 Component Functional Requirements	
039	LB	3/30/83	4/14/83	8/30/83	2/13/84			II.10-1 Env. Eq. Qual.	
040	LB	3/6/83	4/14/83	9/30/83	2/13/84			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	3/5/84	I.10-1 System Hydraulic Design	*
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		8/9/83	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

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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	
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 - PQCs
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

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
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3/16/84 (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>
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		3/12/84			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
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			I.5-3 System Alignment/Switchover I.7-3 System Isolation/Interlocks	
067	DW	9/29/83	9/30/83		9/30/83			I.34-3 Pressurization	Resolved as Observation
068	JAM	9/27/83	9/30/83	9/30/83				II.4-1 EQ/Seismic	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
069	JAM	9/27/83	9/30/83	12/14/83				II.4-1 EQ/Seismic	
070	JAM	9/27/83	9/30/83		12/14/83			I.4-1 EQ/Seismic	Consolidated with C-069
071	JAM	9/27/83	9/30/83	12/14/83	03/5/84			III.1-1 Seismic Design/ Input to Equipment	* Resolved conditional on calc control verif., see also C-085.
072	FAD	9/30/83	10/6/83					I.9-1 Comp. Func. Req. II.2-1 Seismic Design - Pressure Boundary	
073	DW	9/29/83	10/6/83	10/6/83	11/11/83			I.12-3 Cooling/Heating Requirements	OCR-058 related
074	DW	9/29/83	10/6/83	10/6/83	2/13/83			I.1-3 System Operating Limits I.2-3 Acc. Anal. Consid. I.15-3 Power Supplies	
075	DW	9/29/83	10/6/83	10/6/83	1/6/84			I.1-3 System Operating Limits I.2-3 Acc. Anal. Consid.	
076	DW	9/29/83	10/6/83	10/6/83	1/6/84			I.12-3 Cooling/Heating Requirements	
077	JAM	9/27/83	10/6/83	10/6/83				II.4-1 EQ/Seismic	
078	FAD	9/30/83	10/6/83					I.9-1 Comp. Func. Req.	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
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<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 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	2/13/84			II.2-1 Pressure Boundary I.9-1 Comp. Func. Req.	See also Observa- tions B-142 and B-143
082	DW	10/18/83	11/11/83		3/12/84			I.9-3 Comp. Func. Req.	*Chemical Conc./ Dow Interface
083	DW	10/31/83	11/11/83		3/5/84			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 iden- tified 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	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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.
092	RSC	10/18/83	11/11/83	11/11/83				I.3-1C Pipe Supports	Overinspection Prog.
093	DBT	11/10/83	11/21/83	11/28/83				IV.2-3C Const. Doc. Review	HVAC Ducts
094	DBT	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	3/5/84			I.3-3 Single Failure I.5-3 System Alignment	*
098	DMW	11/7/83	12/5/83		3/5/84			III.1-1 Seismic Design	*, See also C-144
099	JAM	11/30/83	12/5/83	12/9/83				III.1-1 Seismic Design	Slab Rotation

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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	3/5/84			III.1-1 Seismic Design	*
103	JAM	11/30/83	12/5/83	12/9/83	3/5/84			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
109	LDB	12/1/83	12/6/83	12/14/83				I.19-2 DG Control	Fuel Lockout
110	LDB	12/1/83	12/6/83	12/14/83				I.24-2 DG Load Capacity	*Load Tabulation, Rev. 1, 2/28/84
111	GES	12/2/83	12/6/83	12/14/83	3/5/84			I.24-2 DG Load Capacity	*, Undervoltage

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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	3/5/84			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	3/5/84			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	Resolved as Observation
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

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
126	DMW	12/19/83			1/6/84			1.2-3 Acc. Anal. Consid.	Air Inleakage, Resolved as Observation
127	DMW	12/20/83			1/6/84			1.9.3 Comp. Func. Req.	Resolved as Observation
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	3/5/84			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	3/5/84			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	3/5/84			1.7-2 Interlocks	*, Cross-unit Interface
135	GES	12/29/83	1/6/84	1/6/84				1.7-2 Interlocks	IEEE 308

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
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		2/13/84			1.25-2 DG Load Sequencing	Resolved as Observation
140	GES	12/15/83	1/6/84					111.8-2 Oil Tanks	
141	GES	12/23/83	1/6/84	2/13/84				1.19-2 DG Controls	
142	FAD	1/16/84			2/13/84			All 'DV Topics	Resolved as Observation, see also C-081
143	FAD	1/26/84			2/13/84			AFW System	Resolved as Observation, see also C-081
144	DW	1/18/84	2/13/84	2/13/84				11.2-1 Pressure Boundary 11.3-1 Pipe Support	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (continued)

<u>OCI 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>
145	DW	1/25/84	1/25/84					I.19-3 Control Systems	
146	GES	1/20/84	2/13/84	2/13/84				I.19-2 DG Control Systems I.29-2 DG Starting Mechanism and Air Supply System	
147	GES	1/20/84	2/13/84	2/13/84				I.20-2 DG Actuation Systems	
148	GES	2/7/84	2/13/84	2/13/84				I.12-2 Fire Protection	
149	GES	12/30/83	2/13/84	2/13/84				I.12-2 Fire Protection	
150	GES	12/1/83	2/13/84	2/13/84				II.12-2 Fire Protection	
151	GES	1/10/84			2/13/84			I.4-2 Technical Specs	Resolved as Observation
152	FAD	1/17/84			2/13/84			I.2-1 Accident Analysis Considerations	Resolved as Observation
153	LDB	2/10/84	2/13/84	2/13/84	3/12/84			I.19-1 AFW Control Systems	*
154	GES	2/10/84	2/13/84					II.12-2 Fire Protection	

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
3/16/84 (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>
155	JAM	2/25/84			3/5/84			III.1-1 Seismic Design/Input to Equipment	* Resolved as Observation
156	CM	2/25/84	3/12/84	3/12/84				II.3-1, 2, 3 Seismic Design, Pipe/Eq. Supt. III.7-1, 2, 3 C/S Design Cons., Conc/St. Design	* *
157	JAM	2/25/84	3/12/84	3/12/84				III.1-1 Seismic Design/Input to Equipment	*
158	FAD	3/2/84			3/12/84			I.10-1 System Hydraulic Design	* Resolved as Observation
159	GES	2/15/84			3/12/84			I.26-2 Load Shed	* Resolved as Observation

ATTACHMENT 3

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

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION
FINDING REPORT**

CLASS: SAFETY X NON-SAFETY _____

FILE NO. 3201-008
DOC NO. 3201-008-F-015
REV. NO. _____

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 3/12/84 PRINCIPAL-IN-CHARGE 3/12/84
SRT 3/12/84 CPC/DESIGN ORG. _____

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

Auxiliary Building, AFW & CR-HVAC Systems & Components

DESCRIPTION OF FINDING: The referenced Bechtel and SMA studies (1,2) indicate that seismic response is amplified (as high as 5 times at certain frequencies) when floor flexibility is analytically considered. The Bechtel study (1) has evaluated the potential impact to equipment and concludes in (3) that floor flexibility need not be considered; however, TERA has concluded that this study has not provided sufficient technical justification. The SMA Study (2) has evaluated the seismic capability of equipment/piping utilizing somewhat different criteria than the FSAR in an attempt to realistically quantify the margins of the Midland plant to withstand a hypothetically larger earthquake than the SSE. This study has generally demonstrated that significant margins exist; however, the study is not focused at determining margins relative to

SIGNIFICANCE OF FINDING:

that associated with FSAR commitments. Accordingly, information is not currently available which would verify that the FSAR "package" of criteria are met when floor flexibility is considered.

The functionability of certain equipment and piping located on flexible floors may be compromised under a seismic event and FSAR criteria/commitments may not be met.

RECOMMENDATION:

Select a sample of representative equipment/piping located on flexible floors and compare the seismic qualification test/evaluated spectra to the required response spectra, appropriately amplified for floor flexibility effects.. Determine whether or not FSAR criteria are met and more generally, the seismic capability utilizing the SMA studies as appropriate.

COMMENTS BY SRT (IF REQUIRED):

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

(1) Bechtel Vertical Floor Flexibility Study (Aux. Bldg.) dated 5/11/82 (ICM 069434) and appended calc packages (SO-119(Q), 550850-141 (Q)); (2) SMA Seismic Margins Evaluation Report, No. 1, App. 1A; (3) C-501, Rev. 12.

SIGNATURE(S):

JA
FINDING REPORT
ORIGINATOR (LTR)
3/3/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
3/12/84
DATE

JWB
PRINCIPAL-IN-CHARGE
3/12/84
DATE

DKD
SRT (IF REQUIRED)
3/12/84
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-026
REV. NO. _____

DATES REPORTED TO: LTR 2/7/84 SRT _____
PRINCIPAL-IN-CHARGE 3/12/84

PROJECT TEAM/PROJECT MGR. 3/5/84
CPC/DESIGN ORG. _____

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

AFW System - Driven Pump Turbine Drain Piping

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.8-1, Overpressure Protection

DESCRIPTION OF CONCERN:

Bechtel field change requests M6694, M6309, and M6995 refer to down-rating the design pressure of certain high-pressure drain piping associated with the turbine and inlet valves of the AFW steam-driven pump. The stated reason is to facilitate testing, since these high-pressure lines are connected to lower pressure lines from which isolation cannot be provided for testing. There is no indication that an engineering evaluation was performed to justify the change.

SIGNIFICANCE OF CONCERN:

Field change requests passed through engineering without documentation of adequate confirmatory calculations and review may jeopardize the integrity of design process.

RECOMMENDATION _____ OR RESOLUTION X _____:

TERA reviewed a copy of the evaluation performed to determine acceptability of the proposed field change. This evaluation resolves the OCR.

COMMENTS BY SRT (IF REQUIRED):

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

Bechtel Calculation FH-4117-29(Q)

SIGNATURE(S):

FAD
OCR ITEM REPORT
ORIGINATOR

2/7/84
DATE

FAD
LTR
2/7/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
3/5/84
DATE

JB
PRINCIPAL-
IN-CHARGE
3/12/84
DATE

SRT (IF REQUIRED)

DATE

**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION
FINDING RESOLUTION REPORT**

CLASS: SAFETY X NON-SAFETY _____

FILE NO. 3201-008
DOC NO. 3201-008-Z-043
REV. NO. _____

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 2/27/84 PRINCIPAL-IN-CHARGE 3/5/84
SRT 3/12/84 CPC/DESIGN ORG. _____

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

AFW System, line 10"-2IIBD-605

DESCRIPTION OF FINDING (OR REFERENCE DOC. NO. OF FINDING REPORT):

Finding 3201-008-F-043 stated that, contrary to statements made by project personnel, line 10"-2HBD-605 is not listed in the M480 document as "hanger critical." Although this line is not "Q" piping, functional capability is assumed in an evaluation of the switchover between the condensate and service water supplies.

DESCRIPTION OF RESOLUTION:

See attached.

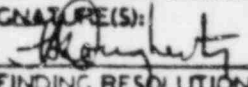
RESOLUTION BASED UPON FOLLOWING DOCUMENTATION:

Bechtel documents:

- o M-327, Rev. 10
- o SCN 19 (change to M-327)
- o P129 (SW-633-3-2APA(Q), Rev. 1)
- o H633, sh 3, Rev. 10
- o Bechtel letter 1/8/84
- o M-480, Rev. 15

COMMENTS BY SRT (IF REQUIRED):

SIGNATURE(S):


FINDING RESOLUTION
REPORT ORIGIN (LTR)

2/27/84

DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM

3/5/84

DATE

JB
PRINCIPAL-IN-CHARGE

3/12/84

DATE

DKD
SRT (IF REQUIRED)

3/12/84

DATE

ATTACHMENT TO 3201-008-Z-043

DESCRIPTION OF RESOLUTION: Bechtel performs inspections of seismic, but non-Q, piping in accordance with its M-327 document. Such piping is called "hanger critical" and may be so classed for a number of reasons, including seismic I/I. Since only "hanger critical" piping receives certain inspections (see Section 6.0 of M-327), it is important to know which hangers are in this category. Bechtel's M-480 document contains a column which is used to indicate whether the piping is subject to the hanger inspection.

For 10"-2HBD-605 the entry on M-480 is "N," indicating that this piping is not hanger critical, although project personnel had indicated that it was. A Bechtel letter dated January 8, 1984, provides clarification of this situation.

Although M-480 provides information concerning whether piping is considered hanger critical, the Bechtel P-129 document is considered controlling. This fact is noted in M-327, as clarified by the application of SCN-19 to Rev. 10 of M-327.

This Finding was resolved by reviewing M-327, SCN-19, and M-480. Furthermore, the P-129 form applicable to this piping was compared against H633, sh 3, Rev. 10, and found to be consistent. Based upon the change to M-327 which specifies that the P-129 form is controlling, this Finding is considered resolved.



**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-071
REV. NO. _____

DATES REPORTED TO: LTR 3/12/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/14/84
PRINCIPAL-IN-CHARGE 3/15/84 CPC/DESIGN ORG. _____

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

AFW System - All

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic III.1-1 - Seismic Design/Input to Equipment
Check of Calculations and Evaluations

DESCRIPTION OF CONCERN:

Calculation package DQ 59.1 (Q) "Finite Element Review for FSAR Load Combinations" for the Aux. Bldg. underpinning model analysis, references BSAP run file TIEN OBQ, as input to the calculation. However, this file may have been superseded, by TIEN OJY or TIEN ORA files. In addition, file TIEN OBQ could not be located for review by TERA.

SIGNIFICANCE OF CONCERN:

Superseded, or incorrect, information could affect design. Requirements of the Aux. Bldg. structure and revised information should be incorporated. Incorrect documentation or failure to incorporate revised information could lead to deficiencies in the design product. The revision process for calculations may not be fully operative.

RECOMMENDATION _____ OR RESOLUTION X _____:

TIEN OBQ was not superseded. Both TIEN OBQ and TIEN ORA were used in the calculation. TERA's review of TIEN ORA and TIEN OBQ indicated that the maximum difference was about 2%. TERA will review the calculation control procedures applicable to this situation as part of the disposition of C-085.

COMMENTS BY SRT (IF REQUIRED):

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

DQ-59.1(Q), DQ59.1C(Q), DQ52.0C1

SIGNATURE(S):

<u>JAM</u>	<u>JAM</u>	<u>HAL</u>	<u>JWB</u>	<u> </u>
OCR ITEM REPORT	LTR	PROJECT MANAGER	PRINCIPAL-	SRT (IF REQUIRED)
ORIGINATOR		FOR PROJECT TEAM	IN-CHARGE	
<u>3/12/84</u>	<u>3/12/84</u>	<u>3/14/84</u>	<u>3/15/84</u>	<u> </u>
DATE	DATE	DATE	DATE	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-097
REV. NO. _____

DATES REPORTED TO: LTR 3/5/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL-IN-CHARGE 3/12/84 CPC/DESIGN ORG. _____

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

CR-HVAC OM0-6501A and B - Gr. I
OM0-6502A and B - Gr. II

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Single Failure Topic 1.3-3
System Alignment/Switchover - Topic 1.5-3

DESCRIPTION OF CONCERN: The CR-HVAC P&ID (M-465) shows that the control room makeup air dampers are arranged in series as OM0-6501A and -6502A in Train A and -6501B and -6502B in Train B. This arrangement results in the in-series dampers being powered from Group I and Group II power (plant single-line drawing E-1 and schematic diagram E-456). The group power can be lined up to either Unit 1 or Unit 2 and is controlled by Kirk-Key interlocks. The concern is that a single failure in Group I or II would prevent the availability of makeup air three hours after a hazardous chemical or high radiation event coincident with unavailability of Unit 1 standby power or an uninhabitable atmosphere outside the control room.

SIGNIFICANCE OF CONCERN:

Positive control room pressure may be lost three hours after initiation of the event which may result in the control room becoming uninhabitable. This would violate GDC 19.

RECOMMENDATION _____ OR RESOLUTION X _____:

See Attached.

COMMENTS BY SRT (IF REQUIRED):

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

Plant Single Line Drawing: E-1(I) CR-HVAC P&ID: M-465
CR-HVAC Schematic Diagram: E-456(Q)

SIGNATURE(S):

DW

OCR ITEM REPORT
ORIGINATOR
3/5/84

DATE

HAL

LTR
3/5/84

DATE

HAL

PROJECT MANAGER
FOR PROJECT TEAM
3/5/84

DATE

JB

PRINCIPAL-
IN-CHARGE
3/12/84

DATE

SRT (IF REQUIRED)

DATE

RESOLUTION: The air dampers are physically located in rooms 733 and 734, which are in reasonably close proximity to the Control Room. Manual repositioning is an acceptable alternative, provided certain conditions are satisfied. (See Standard Review Plan -- NUREG-0800 Rev. 2, Section 6.4, Appendix A.) It has been confirmed that the design includes local manual override capability, and the internals are of a type considered to be highly reliable (see vendor print M-154-3-7). The personnel exposure for the crew utilized to manually operate the valve would also be acceptable based on calculations of post-LOCA dose rates in the Auxiliary Building (see FSAR Table 12.3-7), particularly after three hours into the event.

Based on a review against the criteria of NUREG-0800, manual actuation is considered an acceptable alternative to a design for single failure.



**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.102
REV. NO. _____

DATES REPORTED TO: LTR 3/4/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL-IN-CHARGE 3/6/84 CPC/DESIGN ORG. _____

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

Auxiliary Building, AFW System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

III.1-1 Seismic Design/Input to Equipment

DESCRIPTION OF CONCERN:

Inconsistencies between values presented in calculation package SQ 148B-(Q) and values used in computer input. See attached sheet.

SIGNIFICANCE OF CONCERN:

Analysis and design may not be conservative.

RECOMMENDATION _____ OR RESOLUTION X:

Reference 2 indicated that Bechtel agrees with the noted discrepancies and that each item has a negligible effect on the predicted building response. TERA has reviewed reference 2 and concurs that each discrepancy has a negligible effect and, therefore, this specific OCR can be resolved. However, these items will be collectively evaluated with other related OCRs as part of TERA's broader seismic review assessment of the capability of the building to meet specified criteria.

COMMENTS BY SRT (IF REQUIRED):

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

1. Calc. SQ-148-(Q)
2. Letter from Poser to Levin dated 2/9/84 (COM 142296)

SIGNATURE(S):

CPM
OCR ITEM REPORT
ORIGINATOR

3/4/84
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3/4/84
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PROJECT MANAGER
FOR PROJECT TEAM

3/5/84
DATE

JWB

PRINCIPAL-
IN-CHARGE

3/12/84
DATE

SRT (IF REQUIRED)

DATE

Inconsistencies between calculation package and computer input:

1. Node 123 has y coordinate -53.5 in calculation and -49.0 in computer run.
2. Beam section 5 has shear area 1636 ft² in calculation and 1638 ft² in computer run.
3. Beam section 59 has $A = A_x = A_y = 64$ ft² in calculation and 40 ft² in computer run.
4. Beam 116, section 46 I_y is 0.1 ft⁴ in calculation and 694 ft⁴ in computer run.
5. Plate element 72 of EPA has 3.5 ft thickness in calculation and 21.0 in computer run.
6. Response spectrum curve 3 (damping = .01), the .330 Hz amplitude is entered as 10.304 ft/sec² instead of 1.0143 ft/sec² (velocity and displacements also incorrect) — SQ 148G-C15, and C12. Error due to a zero entered as a letter O.

1. The approximate equation:

$$J_{xx} = I_{xx} \gamma h$$

where J_{xx} = mass moment of inertia
 I_{xx} = area moment of inertia
 γ = density of walls

h = height of walls for given lumped mass point

used to compute local mass moment of inertia for floors is not applicable to single walls such as the underpinning and the electrical penetration area (EPA). (SQ 148D-(Q), page 1213)

2. The approximate equation:

$$J_{zz} = J_{xx} + J_{yy}$$

where J_{zz} = mass moment of inertia

xx, yy, zz = respective axis

is not applicable to single walls such as the underpinning or EPA (SQ 148D-(Q), page 1311)

RESOLUTION (Continued)

Calculation SQ-148K(Q) shows that a 4 percent error in the total mass moment of inertia of the building introduced less than 2 percent variation in frequency of the response. Therefore, the above approximation is judged acceptable.

2. The torsional moment of inertia is computed correctly.

**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-110
REV. NO. 1

DATES REPORTED TO: LTR 2/27/84 SRT _____ PROJECT TEAM/PROJECT MGR. 2/28/84
PRINCIPAL-IN-CHARGE 2/28/84 CPC/DESIGN ORG. _____

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

Standby electric power - Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic 1.24-2: DG Load Capacity Task 186

DESCRIPTION OF CONCERN:

An independent calculation was made for the Unit 2, Load Group II, Diesel generator loads and compared with Bechtel calculations QPE-1, REV 1. Although the calculated loads agreed within 2 percent, the load constituents differed significantly (see attachment 1).

SIGNIFICANCE OF CONCERN:

- (1) QPE-1, REV 1, may be invalid as a basis for future load changes.
- (2) The initial load step is greater than that specified in the diesel generator material requisition, 7220-M-18(Q), REV. 9, Appendix B.

RECOMMENDATION X OR RESOLUTION _____

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

QPE-1, Rev 1

SIGNATURE(S):

<u>GR</u>	<u>LB</u>	<u>HAL</u>	<u>JB</u>	_____
OCR ITEM REPORT ORIGINATOR	LTP:	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>2/27/84</u>	<u>2/27/84</u>	<u>2/28/84</u>	<u>2/28/84</u>	_____
DATE	DATE	DATE	DATE	DATE

Potential Load Discrepancies

1. QPE-1 includes two RCS Makeup Pumps (2P-58B & C); however, only one can be running at a time (Ref. J-232, Sh 1, Rev 5). This is a discrepancy of 900hp.
2. QPE-1 appears to have utilized kVA instead of kW for:

Bus 2B24	2VM-05B	Switchgear Rm Unit Cooler
Bus 2B24	2VM-50B	DHRS Rm Unit Cooler
Bus 2E24	2VM-52B	CCW Rm Unit Cooler
Bus 2E24	2VM-55B	ESF Rm Unit Cooler
3. QPE-1 appears to have based the load of 2VM-54A on 1.5hp rather than 3.0hp.
4. QPE-1 is inconsistent in the application of its own assumption 4, "... manually started loads are assumed operating." Examples include:

2VV-57B & D	Rx Bldg Cooler Fans Assumed On Low Speed
2VE-54B	Hydrogen Recombiner
OVE-04B	Fuel Handling Electric Coil
OP-76B	Fuel Cooling Pump
OVV-86B	Fuel Area Exhaust Fan
5. QPE-1 appears to underestimate the load for 2P-232B (Service Water Booster Pump). Drawing E-18, sh 13, Rev. 10, identifies the full load current at 96 amperes, which corresponds to ~60kW versus the 50kW stated in QPE-1.
6. QPE-1 bases the load for OVV-86B (Emergency Fuel Area Exhaust Fan) on 50hp instead of 75hp as identified on E-18, sh 17, Rev. 12.
7. QPE-1 assumes 15kW for Battery Charger 2D25 instead of 74kVA as indicated on E-18, sh 11, Rev. 15.
8. QPE-1 does not account for both OVV-90D & E (Service Water Supply Air Fans) nor both OF-75D & E (Service Water Strainers).
9. QPE-1 assumes no load on instrument transformer OX95, while E-18, sh 21, Rev. 10, indicates 25kVA.
10. QPE-1 identified 155kW for motor operated valves and dampers. While the alternate calculation was relatively consistent (ie. 162.5kW), QPE-1 does not specifically identify the individual constituents.

Potential Load Discrepancies
(Continued)

11. Examples of items not included in QPE-1 are:

Bus 2B24	2VM-106B	Aux Equip Rm Unit Cooler
Bus 2B24	OVM-52B	Comp Cooling Pp Rm Cooler
Bus 2B24	2VM-51C	Makeup Pump Rm Unit Cooler
Bus 2B56	2VM-54E	AFW Turbine Pp Rm Unit Cooler
Bus 2B56	2VM-121B	Aux Bldg Unit Cooler
Bus 2B90	OVM-109B	Aux Equip Rm Unit Cooler
Bus 2B80	-	Pressurizer Heater

12. QPE-1 is not always consistent with MCC Schedule E-18, Rev. 22 relative to equipment full load current. Example, QPE-1 lists the following motor data:

2P-137	60hp
	91.5% Efficiency
	0.875 Power Factor

Utilizing the above data to compute current yields 70 amperes. However, E-18, sh 7, Rev. 12, identifies the full load current as 77 amperes. This is a discrepancy of 10%.

**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-111
REV. NO. _____

DATES REPORTED TO: LTR 3/1/84 SRT _____
PRINCIPAL-IN-CHARGE 3/12/84

PROJECT TEAM/PROJECT MGR. 3/5/84
CPC/DESIGN ORG. _____

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

SEP System - Class IE battery charger

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic 1.24-2, Electrical Load Capacity - DC

DESCRIPTION OF CONCERN: The following apparently inconsistent statements are made in the FSAR relative to battery charger capability:

- (1) Can recharge battery while carrying largest combined demand of the various steady-state and transient loads irrespective of the status of the plant.
 - (2) Capable of carrying the respective normal steady-state and post-accident 125VDC loads.
 - (3) Can recharge battery while supplying the maximum demand of the steady-state loads.
- Therefore the criteria and commitments for the battery chargers are unclear and conflicting.

SIGNIFICANCE OF CONCERN:

The suitability of chargers depends on defined load requirements. If the criteria which the battery chargers have to meet are unclear or conflicting, then the equipment may not satisfy its intended function.

RECOMMENDATION _____ OR RESOLUTION X _____:

Bechtel letter dated 1/25/84 (Serial #140750) concurred that the FSAR statements were inconsistent and stated that SCN 4162 was initiated to correct the inconsistencies and be consistent with the project commitment to Reg. Guide 1.6 (Rev. 2). SCN 4162 was received in preliminary form at the 2/29/84 status meeting. This SCN shows the consistent rewording to reflect the "normal and post-accident steady state loads". Therefore this OCR is considered resolved.

COMMENTS BY SRT (IF REQUIRED):

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

FSAR Appendix 3A, 8.1.4.3, 8.3.2.1.2, 8.3.2.2.1 (RG 1.6), 8.3.2.2.1 (IEEE 308), RG 1.32; IEEE 308.

SIGNATURE(S):

GES
OCR ITEM REPORT
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3/1/84
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FOR PROJECT TEAM
3/5/84
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PRINCIPAL-
IN-CHARGE
3/12/84
DATE

SRT (IF REQUIRED)

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**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 - 114
REV. NO. _____

DATES REPORTED TO: LTR 3/4/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL IN-CHARGE 3/6/84 CPC/DESIGN ORG. _____

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

Auxiliary Building Slabs at El. 614'-0"

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

111.7-1

DESCRIPTION OF CONCERN:

Thickness of the slab is used instead of effective depth (d) when calculating moment capacity of slab.

SIGNIFICANCE OF CONCERN:

Slab design may not be as conservative as expected.

RECOMMENDATION _____ OR RESOLUTION X :

Bechtel responses (ref. 3) adequate to resolve this OCR. This is based on the fact that this method is only used for one-way slabs perpendicular to beams. When a block wall is parallel to beams, a point load is appropriately used in the calculation.

COMMENTS BY SRT (IF REQUIRED):

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

- (1) Calc. Pkg. 66-6(Q), Rev. 0 (2) OCR-3201-008-0-113
(3) Letter from Poser to Levin dated 2/9/84 (Com 142296)

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3/12/84
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**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-116
REV. NO. _____

DATES REPORTED TO: LTR 3/4/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/4/84
PRINCIPAL-IN-CHARGE 3/5/84 CPC/DESIGN ORG. _____

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

Aux. Bldg. AFW System, CR-HVAC-System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

111.7-1 Concrete/Steel Design, 111.6-1 Foundations

DESCRIPTION OF CONCERN:

- (1) None of the load combination of document C-501(Q) Sections 9.5.1(a) and (b) and Sections 9.5.1(a) and (b) include P_L (effects of jacking preload on structure) whereas the corresponding load combinations of the FSAR include P_L .
(2) FSAR load combinations 4, 5, 6 include T (effects of differential settlement) whereas the corresponding C-501(Q) load combinations include T_0 (thermal effects during normal operation).
(3) None of the C-501(Q) load combinations include T (effect of differential settlement)

SIGNIFICANCE OF CONCERN:

Design of the aux. building based on analysis of the load combinations as defined in C-501(Q) may be less conservative than design based on FSAR load combinations.

RECOMMENDATION _____ OR RESOLUTION X _____:

Reference 3 provides clarification indicating that C-501 is subject to certain limitations, particularly with regard to the supplementation of design criteria developed in the remedial actions (ref. 4). Accordingly, references 1 and 4 together cover the full set of FSAR load combinations and items 1 through 3 are resolved. Item 4 was addressed in reference 5 where it was indicated that a typographical error in Rev. 48 of the FSAR has been corrected in Rev. 49.

COMMENTS BY SRT (IF REQUIRED):

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

- (1) Document 7220-C-501(Q), Rev. 12 (2) FSAR (3) BSAP-Post Computer Program
(4) Letter from Poser to Levin dated 2/9/84 (Com 142296) (5) 7220-C-503(Q) (6) Ltr. from Poser to Levin dated 1/8/84 (Com 142207)

SIGNATURE(S):

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FOR PROJECT TEAM

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3/12/84
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DATE

Attachment to 3201-008-R-116

DESCRIPTION OF CONCERN:

- (4) BSAP-Post Program load combination $U=1.0 (D+L+E') + 1.0P_L + 1.0T$ is not consistent or conservative w/respect to FSAR load combination $1.4 (D+L+E') + 1.0P_L + 1.0T$.

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-B-129
REV. NO. _____

DATES REPORTED TO: LTR 3/2/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL-IN-CHARGE 3/12/84 CPC/DESIGN ORG. _____

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

Control Room HVAC
Hazardous Gas Monitoring System

OCR PROGRAM AREA OR TASK (IF APPLICABLE):

Component Functional Requirements Topic I.9-3

DESCRIPTION OF CONCERN:

See Attachment 1.

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 _____ OR RESOLUTION X :

See Attachment 2.

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 FN 0505-56(Q) Rev. 0

SIGNATURE(S):

DMW [Signature]
OCR ITEM REPORT
ORIGINATOR
3/2/84
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PROJECT MANAGER
FOR PROJECT TEAM
3/5/84
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PRINCIPAL-
IN-CHARGE
3/12/84
DATE

SRT (IF REQUIRED)

DATE

ATTACHMENT 1 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.



ATTACHMENT 2 TO 3201-008-R-129

RESOLUTION: The concern raised was primarily a question of whether the dampers specified for Control Room HVAC isolation closed quickly enough. Dampers OMO 6501 and OMO 6502 isolate in three seconds, which is not sufficiently fast; however, in a normal alignment of the system, the flow is through a makeup HEPA filter bypass line. That path has dampers (OXV 6511 and OXV 6512) which are designed to isolate in one second. This has been confirmed by a review of vendor print M-154-13-2 sheet 2 of 2; therefore, HVAC system isolation is considered to be sufficiently quick to meet system requirements.

A second issue identified in the OCR is the response time for bromine and hydrogen bromide. The monitoring system specification allows a slower response time for these substances. This apparent inconsistency is a result of the interface between the vendor and the designer. The technology for this device is state-of-the-art, which necessitates the setting of designer objectives instead of firm requirements. Similarly, sulfur trioxide and ethylene oxide detection requirements are under development and are part of the issue addressed in OCR 3201-008-082.



**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-C-132
REV. NO. _____

DATES REPORTED TO: LTR 3/1/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL-IN-CHARGE 3/12/84 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 7.3-2, 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 _____ OR RESOLUTION X :

The design documentation and design implementation, as indicated in Bechtel letter dated 1/8/84 (Serial #142207), now correspond and satisfy design criteria. The load shed setpoint and time delay are consistent with the FSAR. The revised drawings are J-878, Sh. 1, Rev. 4 (1/3/84) and E-75, Sh. 4, Rev. 7. Therefore, this OCR is considered resolved.

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):

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OCR ITEM REPORT
ORIGINATOR
3/1/84
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FOR PROJECT TEAM
3/5/84
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PRINCIPAL-
IN-CHARGE
3/12/84
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-C - 134
REV. NO. _____

DATES REPORTED TO: LTR 3/1/84 SRT _____
PRINCIPAL-IN-CHARGE 3/12/84

PROJECT TEAM/PROJECT MGR. 3/5/84
CPC/DESIGN ORG. _____

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:
Standby Electric Power - LOP Sequencer

SDCV 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 diagram (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 _____ OR RESOLUTION X _____:

Bechtel letter dated 2/24/84 (Serial #143592) presents design information and indicates that this concern was discovered and corrected before receipt of the OCR. The design documentation now corresponds with implementation documentation and satisfies design criteria. The removal of the unit cross-tie is consistent with the FSAR. Therefore, this OCR is considered resolved.

COMMENTS BY SRT (IF REQUIRED):

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

SIGNATURE(S):

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OCR ITEM REPORT
ORIGINATOR
3/1/84
DATE

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3/1/84
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FOR PROJECT TEAM
3/5/84
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PRINCIPAL-
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3/12/84
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-153
REV. NO. _____

DATES REPORTED TO: LTR 3/4/84 SRT _____
PRINCIPAL-IN-CHARGE 3/12/84

PROJECT TEAM/PROJECT MGR. 3/12/84
CPC/DESIGN ORG. _____

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:
Auxiliary Shutdown Panel (2C114)

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

AFW Control Systems (Topic 1.19-1)

DESCRIPTION OF CONCERN:

Steam Generator (S/G) AFW isolation valve switches are arranged on panel 2C114 as shown below. Drawing J-909 shows demarcations which imply that Valves 3965A and 3970A isolate steam generator A while the other valves isolate steam generator B. This implication conflicts with P&ID M-439 Which shows valves 3965A and 3970B isolating steam generator A and valves 3965B and 3970A isolating steam generator B. A similar apparent conflict exists on control board 1C11 in Unit No.1.

SIGNIFICANCE OF CONCERN:

The apparent conflict between the panel drawing and the P&ID could mislead the plant operator and result in operator error. It is suspected that a like problem exists on the main control board to C-11. (Drawings were not available to confirm this).

RECOMMENDATION _____ OR RESOLUTION X _____:

The Item is resolved on the basis that CPO. indicated that the nameplate designations for the switches clarify the drawing J-909 and confirm that it agrees with the P&ID M-439. The demarcations on J-909 which were interpreted to denote S/G's were not intended to so indicate.

COMMENTS BY SRT (IF REQUIRED):

SWITCH POSITION ON PANEL 2C114: *3965A
 *3970A
 *3970B
 *3965B

*Denotes relative switch position on the panel drawing.

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

P&ID M-439, Rev. 10, M-438, Rev. 10
Drawings J-909, Rev. 10, J-727, Rev. 12

SIGNATURE(S):

LDB
OCR ITEM REPORT
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FOR PROJECT TEAM

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

TYPE OF REPORT: OPEN _____ CONFIRMED _____
Observation RESOLVED X ITEM _____

FILE NO. 3201-008
DOC NO. 3201-008-B 155
REV. NO. _____

DATES REPORTED TO: LTR 2/25/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/12/84
PRINCIPAL-IN-CHARGE 3/12/84 CPC/DESIGN ORG. _____

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

Auxiliary Building, AFW System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

III.1-1 Seismic Design/Input to Equipment

DESCRIPTION OF CONCERN:

The node indices are inverted between Figures K-1 and K-2 (describing the structure) and Figures K-5 through K-10 (presenting the response spectra).

SIGNIFICANCE OF CONCERN:

This item is confusing to the reader; however, in view of its purpose and the fact that it is presented as an appended example, a concern does not exist that it would lead to a user's error.

RECOMMENDATION _____ OR RESOLUTION X _____:

Correct and treat as an observation.

COMMENTS BY SRT (IF REQUIRED):

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

BC-TOP-4, Rev. 4

SIGNATURE(S):

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ORIGINATOR
2/25/84

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3/12/84

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3/12/84

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

TYPE OF REPORT: OPEN _____ CONFIRMED <u>X</u> _____ RESOLVED _____ ITEM _____		FILE NO. <u>3201-008</u> DOC NO. <u>3201-008-C-156</u> REV. NO. _____		
DATES REPORTED TO: LTR <u>2/25/84</u> SRT _____ PRINCIPAL-IN-CHARGE <u>3/12/84</u>		PROJECT TEAM/PROJECT MGR. <u>2/28/84</u> CPC/DESIGN ORG. _____		
STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED: All systems/embedments				
IDC/PROGRAM AREA OR TASK (IF APPLICABLE): Seismic design, pipe/equipment support - Topics II.3-1,2,3 Civil/structural design considerations, concrete/steel design - Topics III.7-1,2,3				
DESCRIPTION OF CONCERN: An independent calculation was completed to verify information presented in figure II of the referenced drawing. This figure establishes the allowable pullout forces and moments for various embedded channel assemblies. Several load cases were chosen for evaluation. For example, a case corresponding to a force $F_x=10^k$ and moment $M_z=50$ k-in was chosen and stresses were computed and compared to the allowable stresses as specified in the acceptance criteria. The Factor of Safety was determined to be less than 1.0.				
SIGNIFICANCE OF CONCERN: When designed in conformance to the referenced drawing, attachments to the embedded channels may not meet the design criteria.				
RECOMMENDATION <u>X</u> OR RESOLUTION _____: Process per PQAP.				
COMMENTS BY SRT (IF REQUIRED):				
REFERENCES (INCL. RELATED OCR ITEM REPORT NO.): 1) Civil/Struct. Calc. Q52(Q) Rev.3 2) Drawing C-143(0) Rev.12				
SIGNATURE(S):				
<u>JA</u> OCR ITEM REPORT ORIGINATOR <u>2/25/84</u> DATE	<u>JAM</u> LTR <u>2/27/84</u> DATE	<u>HAL</u> PROJECT MANAGER FOR PROJECT TEAM <u>3/12/84</u> DATE	<u>JB</u> PRINCIPAL- IN-CHARGE <u>3/12/84</u> 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-157
REV. NO. _____

DATES REPORTED TO: LTR 2/25/84 SRT _____ PROJECT TEAM/PROJECT MGR. 2/23/84
PRINCIPAL-IN-CHARGE 3/12/84 CPC/DESIGN ORG. E

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

Auxiliary Building, AFW System

ICDV PROGRAM AREA OR TASK (IF APPLICABLE):

III.1-1 Seismic Design/Input to Equipment

DESCRIPTION OF CONCERN:

In response to C-104, Reference 2 indicated that Bechtel was aware of the identified discrepancies and that they were addressed in Reference 3.

SQ-148K(Q) (Reference 3) page 9; the mass moment of inertia is incorrectly transferred to the center of gravity in cases (b) and (c).

SIGNIFICANCE OF CONCERN:

Even though the mass moment of inertia of mudmat (E-W earthquakes) is underestimated by a factor of ≈ 3.7 , the overall impact is insignificant.

The concern is directed at the checking procedure that leaves such errors undetected.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

(1) 3201-008-C-104 (2) Letter from Poser to Levin dated 2/9/84 (Com 142296)
(3) SQ-148K(Q)

SIGNATURE(S):

<u>CM</u>	<u>JAM</u>	<u>HAI</u>	<u>JWB</u>	
OCR ITEM REPORT	LTR	PROJECT MANAGER	PRINCIPAL-	SRT (IF REQUIRED)
ORIGINATOR		FOR PROJECT TEAM	IN-CHARGE	
<u>2/25/84</u>	<u>2/27/84</u>	<u>3/12/84</u>	<u>3/12/84</u>	<u> </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 RESOLVED X ITEM _____

FILE NO. 3201-008
DOC NO. 3201-008-B-158
REV. NO. _____

DATES REPORTED TO: LTR 3/2/84 SPT _____ PROJECT TEAM/PROJECT MGR. 3/5/84
PRINCIPAL-IN-CHARGE 3/12/84 CPC/DESIGN ORG. _____

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

AFW System Piping

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

I.10-1 System Hydraulic Design

DESCRIPTION OF CONCERN:

The ratio of the pressures across flow orifice 2F0-39002D is limited by the critical pressure ratio. The fluid flowing across the orifice then produces a shock reducing the pressure further downstream. Thus, a section of the downstream portion of the pipe "sees" a higher pressure than shown on M-480.

SIGNIFICANCE OF CONCERN:

This is not a significant concern for the piping in question because its original design pressure was higher than the pressure calculated using the critical pressure ratio. However, other situations may exist in systems other than those reviewed by the IDCVP where failure to consider the effect of the critical pressure ratio may result in unconservative pressures being used for design.

RECOMMENDATION _____ OR RESOLUTION X _____

Process as an observation. Place subject on the action item list.

COMMENTS BY SRT (IF REQUIRED):

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

SIGNATURE(S):

FAD	FAD	HAL	JB	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MANAGER FOR PROJECT TEAM	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
<u>3/2/84</u>	<u>3/2/84</u>	<u>3/12/84</u>	<u>3/12/84</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 RESOLVED X ITEM _____

FILE NO. 3201-008
DOC NO. 3201-008-B.159
REV. NO. 0

DATES REPORTED TO: LTR 2/21/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/12/84
PRINCIPAL-IN-CHARGE 3/12/84 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 1.26-2: Load Shed

DESCRIPTION OF CONCERN:

Drawing E-75, Sh. 4, Rev. 6, 4.16 Kv Bus Undervoltage Schematic Diagram specifies the field installation of four jumpers; however, it does not specify minimum allowable gauge size.

SIGNIFICANCE OF CONCERN:

Potential exists to undersize the jumpers.

RECOMMENDATION _____ OR RESOLUTION X _____:

This item is resolved by classification as an Observation.

COMMENTS BY SRT (IF REQUIRED):

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

See above.

SIGNATURE(S):

GAR
OCR ITEM REPORT
ORIGINATOR
2/15/84
DATE

GES
LTR
2/21/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
3/12/84
DATE

JB
PRINCIPAL-
IN-CHARGE
3/12/84
DATE

SRT (IF REQUIRED)

DATE