

MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
MONTHLY STATUS REPORT

NUMBER 11

PERIOD MARCH 1, 1984 THROUGH MARCH 31, 1984

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MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION
VERIFICATION PROGRAM (IDCV)

MONTHLY STATUS REPORT

NUMBER 11

PERIOD MARCH 1, 1984 THROUGH MARCH 31, 1984

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 March 1, 1984 through March 31, 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 summarizes plans for completion of the Midland IDCVP. A meeting was held on March 13, 1984 at NRC's Bethesda, Maryland offices to discuss details of the plans. A summary of this meeting was issued on March 15, 1984. TERA indicated that the fundamental objectives and philosophy of the program have and will continue to remain intact; however, details of execution and timing have been refined to better deal with the status and recent programmatic evolutions of the Midland project. The NRC plans to issue a letter confirming their understanding and concurrence.

The eighth OCR Status Review Meeting was held on March 28, 1984 at Bechtel's Ann Arbor, Michigan offices. The schedule for Bechtel's response with additional information relevant to outstanding civil/structural OCRs/Findings was discussed. It is apparent that delays in this area of design verification will occur. The full schedule impact will be quantified in early May upon receipt of additional information from Bechtel and in consideration of issues discussed at an April 17, 1984 meeting which will be held to assess the potential applicability of the SMA Seismic Margins Evaluation to the disposition of outstanding civil/structural OCRs.

2.2 Design Verification Activities

2.2.1 Summary

As discussed in Section 2.1, a major activity for March was the public meeting held at the NRC's Bethesda, Maryland offices to discuss plans for completion of the Midland IDCVP. Activities discussed at that meeting have been placed on hold pending a formal response to the plan outlined by TERA. It is expected that these activities will recommence in April after receipt of NRC comments and development of appropriate procedures. Work continued on the AFW System Performance Requirements topical report which has been on hold since November. Work was initiated on the CR-HVAC System Performance Requirements topical report during March. Other activities during the month included dispositioning of OCRs and completion of previously initiated work.

2.2.2 Auxiliary Feedwater System Progress

Work continued on completion of a topical report covering AFW System Performance Requirements topics. Additional information was received allowing dispositioning of OCRs. Changes to OCR status are discussed in Section 3.0 of this status report.

In the civil/structural review area, progress was made in dispositioning of OCRs. Meetings on OCRs, which discussed civil/structural items, were held on March 1 and March 28. At the March 28 meeting, Bechtel reviewed their expected

response dates for providing information relevant to the outstanding items. The scheduled response dates span the period late April through early May. TERA anticipates IDVP delays as a direct impact of this schedule. TERA personnel were in Ann Arbor during the weeks of March 19 and March 26 to obtain additional documentation and review Bechtel calculation files.

2.2.3 SEP System Progress

Dispositioning of OCRs continued in March with information received to respond to the potential load discrepancies noted in OCR-3201-008-C-110 on a point-by-point basis. Additionally, pneumatic system leak-rate data were received as was a new diesel generator exhaust backpressure calculation. Responses to additional OCR items, which were received at the March 28 OCR status meeting, are being reviewed. At that time TERA also received a copy of electrical calculation QPE-23 (Q) on Class IE battery continuous load capability. OCRs which were resolved or otherwise dispositioned are discussed in Section 3.0 of this report.

Internal review of draft engineering evaluations is continuing, seven engineering evaluations and the diesel generator load tabulation calculation have been verified and are awaiting final approval. Draft engineering evaluations of the diesel generator and power distribution system electrical characteristics and protective devices/settings review topics are nearing completion. The technical review of the 120 Vac and 125 Vdc power systems is continuing based upon a previous receipt for requested additional documentation and calculation QPE-23 (Q).

2.2.4 Control Room HVAC System Progress

Engineering evaluations for the major System Performance Requirements topics excluding Component Functional Requirements have been completed and are now in the verification process. The Component Functional Requirements engineering evaluation was on hold pending completion of confirmatory calculations associated with revised cooling coil performance requirements. That effort will be completed after revised flow diagrams can be reviewed to check consistency of flow rate used in the calculations.

Two OCRs are yet to be resolved. OCR 3201-008-C-085 addresses the methods for controlling calculations. A review of calculation control procedures has been initiated, and followup activities defined. OCR-3201-008-O-145 has been made a Confirmed Item requiring a response from the project.

In March the review of fire protection issues unique to the CR-HVAC was initiated. Key issues have been defined and the P&ID and HVAC layout drawings have received a preliminary review to examine fire area boundaries. The status of the structural review of the auxiliary building which houses HVAC components is discussed in Section 2.2.2 of this report.

2.3 Construction Verification Activities

ICV reviewers focused their activities upon the disposition of existing Confirmed Items and Findings and initiated the review of the Quality Verification Program (QVP) by reviewing the QVP Plan and supporting procedures. Principal activities undertaken by ICV reviewers during this reporting period are as follows:

- Based upon formal responses received from Bechtel and CPC, ICV reviewers dispositioned the following Confirmed Items and Findings. Copies of these reports are included in Attachment 3 of this report.

<u>Confirmed Item/Finding</u>	<u>Previous Status</u>	<u>Current Status</u>
F-091: Lesson Plan for the Hanger Reinspection Program	Finding	Resolved
C-092: Qualification of QCEs for the Conduct of Hanger Reinspections	Confirmed Item	Resolved
C-093: CR-HVAC Deviation from Welding Standards	Confirmed Item	Finding
C-094: CR-HVAC Duct/Hanger Physical Deviations	Confirmed Item	Resolved
C-095: Zack Welder Qualifications	Confirmed Item	Resolved
C-096: CR-HVAC Duct/Hanger Quality Documentation	Confirmed Item	Resolved

- ICV program management participated in the March 13, 1984 meeting held in the NRC's Bethesda, Maryland offices which was held to discuss plans to complete the IDCVP and to respond to questions from interested and concerned parties. ICV program management provided near and long-term plans for executing the ICV program methodology in accordance with the IDCVP Engineering Program Plan, as supplemented with a review of Quality Verification Program (QVP). A summary of issues discussed and addressed during the meeting including the influence of the status of the CPC Construction Completion Program (CCP) was provided in TERA letter of March 15, 1984.
- ICV reviewers commenced their review of the Quality Verification Program (QVP) by developing a detailed understanding of the QVP's charter and the significant controlling procedures. The emphasis of this review activity is to develop an understanding of important elements of the QVP to the extent that these elements have a bearing on the quality of end products as ultimately substantiated by the Quality Verification Packages generated by the QVP.

Near term activities will include interviews with cognizant site personnel and observations of site QVP activities to address the following:

- Measures undertaken which guarantee the integrity and completeness of quality verification packages;
- Methods employed which effectively integrate QVP outputs with outputs from the Status Assessment teams such that a clear and concise representation of the quality of installed items is obtained and retained.
- Near term activities involve the continuation of the QVP review and a review and evaluation of information received which should enable ICV reviewers to disposition Finding F-047 concerning site storage and maintenance activities.

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 March, a new Finding and eight new Confirmed Items were identified. A previous Finding, one previous Open Item, and six previous Confirmed Items were resolved. Additionally, one Observation and three Open Items were identified. Accordingly, the status of disposition of OCRs/Findings for the IDCVP from inception through April 17, 1984 can be summarized as shown on Attachment 4.

Finding F-093 is concerned with deviations from AWS welding standards which were allowed in Project Spec. 7220-M-151A, Rev. 15, without sufficient engineering justification. This may result in the acceptance of welds which are not in compliance with applicable codes and standards and which have not been evaluated from a design standpoint.

Finding Resolution Report Z-091 provides close-out for an item concerned with the omission of training instructions for the inspection of snubber assemblies in Lesson Plan Rev. 4 for PQCI-P-2.30, Rev. 3. Documentation was provided by CPC that verified that the trainees did, in fact, receive instructions for inspecting snubber assemblies. The documentation indicated that the course instructor noted the omission prior to the training sessions and provided the required training for Lesson Plan Revs. 3 and 4. All other Lesson Plan revisions were found to contain the pertinent training instructions.

Confirmed Item C-145 is concerned with inconsistencies noted in the CR-HVAC duct layout and system configuration when the physical arrangement drawing was compared to the P&ID.

Confirmed Item C-161 identifies a situation where the voltage drop at the terminals of motor operated valves can exceed that required for operation.

Confirmed Item C-162 is concerned with a lack of design criteria to address how motors which require 80% nominal voltage at their terminals to accelerate will be assured sufficient starting voltage when the electrical system design is such that the total voltage drop is less than 30%.

Confirmed Item C-163 is concerned with conflicting information presented in the FSAR regarding which version of IEEE 387 is intended to govern the design of the diesel generators.

Confirmed Item C-165 identifies a conflict between B&W NSB bus voltage requirements and calculated bus voltages available.

Confirmed Item C-168 is concerned with contradictory statements in calculation 21G (4.154)(Q) Rev. 0, regarding the longitudinal support given by a support member.

Confirmed Item C-169 is concerned with the impact of modal mismatch and corrected seismic analyses producing potentially larger accelerations than the ones documented in Spec. G-7.

Confirmed Item C-170 identifies discrepancies in calculation 29D.268(Q) Rev. 0, regarding the CR-HVAC system duct supports. Discrepancies in procedures, section length, modeling, and the moment distribution calculation are noted.

ATTACHMENT I

MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

TERA PROJECT 3201

PERIOD MARCH 1, 1984 THROUGH MARCH 31, 1984

<u>Date</u>	<u>Milestone</u>
March 1, 1984	Civil/Structural review meeting held at Bechtel's Ann Arbor, Michigan offices
March 8, 1984	Meeting summaries issued documenting the Seventh OCR Status Review Meeting held on February 29, 1984 and a Civil/Structural review meeting held on March 1, 1984 at Bechtel's Ann Arbor, Michigan offices
March 13, 1984	Meeting held at NRC's Bethesda, Maryland offices to discuss TERA's plans for completing the IDCVP as summarized in a February 10, 1984 letter
March 15, 1984	Meeting summary issued documenting the discussion at the March 13, 1984 meeting
March 16, 1984	Tenth Month Status Report issued
March 19-23, 1984	IDV reviewers at Bechtel's Ann Arbor, Michigan offices reviewing civil/structural calculations
March 20, 1984	Meeting notice issued for Eighth OCR Status Review Meeting
March 26-30, 1984	IDV reviewers at Bechtel's Ann Arbor, Michigan offices reviewing civil/structural and other miscellaneous items
March 28, 1984	Eights OCR Status 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 4/17/84

<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	*, Rev. I, 4/4/84
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
4/17/84 (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.11-I Heat Removal Cap	
018	FAD	2/17/83	3/4/83	3/4/83		11/11/83	11/11/83	I.10-I Hydraulic Design 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. I.9-I Comp. Func. Req.	B-080 Related
021	FAD	2/24/83	3/4/83		4/9/84			II.10-I Eq. Qual.	*, 0-21, Rev. 1, 4/14/83 *
022	LB	2/24/83	3/4/83	8/8/83	4/5/84			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		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
4/17/84 (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>
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
4/17/84 (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	4/9/84			I.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	3/8/83	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. I, 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. I, 8/30/83

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
4/17/84 (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 - PQCI's
055	DBT	9/19/83	9/29/83	11/11/83		12/1/83		All ICV Topics	Const./Installation Documentation - WPs & PGRs
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
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
4/17/84 (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
4/17/84 (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
4/17/84 (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 Considerations 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
4/17/84 (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				11.12-1 Fire Protection	C-089, Rev. 1 11/29/83
090	FAD	10/13/83			11/11/83			11.12-1 Fire Protection	Resolved as Observation
091	RSC	10/18/83	11/11/83	11/11/83		12/1/83	3/29/84	1.3-1C Pipe Supports	* Overinspection Prog.
092	RSC	10/18/83	11/11/83	11/11/83	3/27/84			1.3-1C Pipe Supports	* Overinspection Prog.
093	DBT	11/10/83	11/21/83	11/28/83		3/19/84		IV.2-3C Const. Doc. Review	* HVAC Ducts
094	DBT	11/10/83	11/21/83	11/28/83	3/19/84			IV.2-3C Physical Verif.	* HVAC Ducts
095	DBT	11/10/83	11/21/83	11/28/83	3/19/84			IV.2-3C Const. Doc. Review	* HVAC Welding Docs
096	DBT	11/10/83	11/11/83	11/28/83	3/30/84			IV.2-3C Const. Doc. Review	* HVAC Ducts and supports
097	LDB	11/30/83	12/5/83	12/9/83	3/5/84			1.3-3 1.5-3 Single Failure 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
4/17/84 (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
4/17/84 (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				I.30-2 DG Exhaust	
113	JAM	11/3/83	11/7/83	12/14/83				III.7-1 Conc/steel design	
114	JAM	11/3/83	11/7/83	12/14/83	3/5/84			III.7-1 Conc/steel design	
115	JAM	11/10/83	11/10/83	12/14/83				III.7-1 Conc/steel design	
116	JAM	11/10/83	11/10/83	12/14/83	3/5/84			III.7-1 Conc/steel design	
117	JAM	10/31/83	11/10/83	12/14/83				III.5-1 Foundations III.7-1 Conc/steel design	
118	JAM	10/31/83			12/14/83			III.6-1 Foundations	Resolved as Observations
119	JAM	10/5/83	11/14/83	12/14/83				II.4-1 Seismic Qual.	
120	JAM	10/26/83	11/14/83	12/14/83				II.4-1 Seismic Qual.	
121	JAM	10/26/83	11/14/83	12/14/83				II.4-1 Seismic Qual.	
122	JAM	10/26/83	11/14/83	12/14/83				II.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				III.1-2 Seismic Design	Stick Model

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
4/17/84 (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
4/17/84 (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 IDV 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
4/17/84 (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>
145	DW	1/25/84	1/25/84	4/9/84				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	12/30/83	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
4/17/84 (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, Seismic Design, Pipe/Eq. Supt. 2, 3 III.7-1, C/S Design Cons., Conc/St. 2, 3 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
160	GES	4/2/84	4/10/84					I.16-2 Elec. Character.	*
161	GES	4/2/84	4/10/84	4/10/84				I.16-2 Elec. Character.	*
162	GES	3/13/84	4/10/84	4/10/84				I.16-2 Elec. Character.	*
163	GES	3/13/84	4/10/84	4/10/84				All DG Topics, SEP	*
164	GES	3/13/84	4/10/84					I.24-2 Elec. Load Cap (DC)	*
165	GES	3/13/84	4/10/84	4/10/84				I.16-2 Elec. Character.	*

OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM
 MIF DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
 4/17/84 (continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Con. Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
166	GES	3/13/84			4/10/84		II.3-2 Pipe/Eq/ Support	* Resolved as Observation
167	DW	3/20/84	4/9/84				I.12-3 Cooling/Heating Req. I.9-3 Comp. Func. Req.	*
168	CPM	3/28/84	4/9/84	4/9/84			II.3-3 Duct Support	*
169	CPM	3/29/84	4/9/84	4/9/84			III.1-1 Seismic Design/ Input to Equip.	*
170	CPM	3/28/84	4/9/84	4/9/84			II.3-3 Duct Support	*

ATTACHMENT 3

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

**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-005
REV. NO. 1

DATES REPORTED TO: LTR 3/30/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/4/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

AFW, SEP, and CR-HVAC Systems

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Multiple Areas

DESCRIPTION OF CONCERN:

See attached.

SIGNIFICANCE OF CONCERN:

Because no other primary source of documentation of criteria and commitments exists, it is essential that the FSAR be an accurate reflection of the design basis for the plant. Systems, structures, and components would be designed to incorrect, improper, or unreviewed criteria if the FSAR is in error.

RECOMMENDATION X OR RESOLUTION _____

TERA will review the FSAR control process to determine the disposition of this item.

COMMENTS BY SRT (IF REQUIRED):

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

Above referenced OCRs and: 3201-008-R-037, -C-043, -B-059, C-077 and B-080.

SIGNATURE(S):

FAD
OCR ITEM REPORT
ORIGINATOR

3/30/84
DATE

FAD
LTR

3/30/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM

4/4/84
DATE

JWB
PRINCIPAL-
IN-CHARGE

4/9/84
DATE

SRT (IF REQUIRED)

DATE

DESCRIPTION OF CONCERN:

The original confirmed item was specifically related to apparent discrepancies in AFW parameters. Although the specific concerns (OCRs C-017, -018, -020, -027, and -028) were subsequently dispositioned, the finding and the finding resolution reports (3201-008-F-018, Z-018) state that TERA will use the CR-HVAC and SEP systems as an additional sample to determine the accuracy of the FSAR as a statement of design criteria.

This confirmed item was not dispositioned pending further reviews. It is being revised now to consolidate and document the concerns which have developed which are related to the original confirmed item. These concerns are:

- o The accuracy of the FSAR as a statement of design criteria
- o The extent to which the B&W BOP criteria documents and the actual plant design criteria are consistent and the methods used to resolve the discrepancies
- o Analyses to support some FSAR statements could not be located
- o FSAR updating process may not be consistent and timely.



**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-022
REV. NO. _____

DATES REPORTED TO: LTR 3/21/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/5/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

AFW Steam Generator Level Control

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

AFW Control Systems - Topic 1.19-1

DESCRIPTION OF CONCERN:

Documentation is not available to demonstrate that the steam generator level control system will be stable and capable of controlling S/G level within the rate and level limits as determined by design criteria. B&W correspondence to CPCO #2787 dated April 29, 1980 recommended that analysis be performed to demonstrate control system capability and compliance to design criteria.

SIGNIFICANCE OF CONCERN:

The S/G level control system may not control actual level rise rate to 4"/min. causing overcooling during accident conditions such as small break LOCA.

RECOMMENDATION _____ OR RESOLUTION X :

See attached.

COMMENTS BY SRT (IF REQUIRED):

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

Instrument Loop Diagram J-377 (Q) Sh. 35-40.

SIGNATURE(S):

LDB
OCR ITEM REPORT
ORIGINATOR

3/21/84
DATE

LDB
LTR

3/21/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM

4/5/84
DATE

JWB
PRINCIPAL-
IN-CHARGE

4/9/84
DATE

SRT (IF REQUIRED)

DATE

Attachment to
3201-008-R-022

RESOLUTION:

Consumers Power Co. (CPCO) by letter serial 28589 dated 3-6-84 provided additional information which resolved this Item (022) and responded to TERA's letter from H. Levin to L. Gibson dated 2-14-84. The Confirmed Item is resolved on the basis that preoperational, hot functional and startup tests will, in a progressive manner, test the AFW S/G level control systems. These tests will impose disturbances on and exercise the AFW S/G level control system under conditions which simulate the expected plant operating conditions. System parameters will be monitored during these tests to verify stable system performance to design requirements. This testing is a reasonable alternative to the above referenced B&W letter.



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. 3201-008
DOC NO. 3201-008-R-038
REV. NO. _____

DATES REPORTED TO: LTR 3/26/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/9/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

AFW Pump Turbine Minimum Flow Valve

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.15-1, Control/Power Supplies

DESCRIPTION OF CONCERN:

Under condition of loss of all AC (station blackout), the AFW pump minimum flow valve 2SV-3969B would not be operable because it is powered from Class 1E AC power. The Midland FSAR and B&W BOP criteria document (36-1004477) both require that AFW be operable for two hours under station blackout. During this period of time, flow through the minimum flow line may be necessary to prevent damage to the pump.

SIGNIFICANCE OF CONCERN:

Failure to provide minimum flow would cause consequential damage to the AFW turbine driven pump during station blackout.

RECOMMENDATION _____ OR RESOLUTION X :

Documentation provided by the vendor indicates that the pump can tolerate a flow of 100 gpm for two hours. Calculations by TERA indicate that the post-blackout decay heat level will generally require more than 100 gpm. Conditions which would result in less than a 100 gpm demand are unlikely. The flow requirement during the first approximately 45 mins. of the event (assuming starting at full power) is governed by the level control system at about 200 gpm. Thus, sufficient time is available for the operator to diagnose the situation and operate the pump manually or take other appropriate action. Therefore, it can be concluded that the present design is adequate.

COMMENTS BY SRT (IF REQUIRED):

(continued on attached)

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

OCR 3201-008-0-012 and C-012 TERA Calculation 3201-003-016
Drawing E-158(Q) SH 29, 29A, 29B, 29C

SIGNATURE(S):

FAD
OCR ITEM REPORT
ORIGINATOR

FAD
LTR

HAL
PROJECT MANAGER
FOR PROJECT TEAM

JWB
PRINCIPAL-
IN-CHARGE

SRT (IF REQUIRED)

3/26/84
DATE

3/26/84
DATE

4/9/84
DATE

4/9/84
DATE

DATE

Attachment to 3201-008-R-038

However, appropriate procedures must exist to ensure that the operator is aware that the minimum flow valve is not operable under blackout conditions if the present design is not modified.

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

CLASS: SAFETY X NON-SAFETY _____

FILE NO. 3201-008
DOC NO. 3201-008-Z 091
REV. NO. 0

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 3/29/84 PRINCIPAL-IN-CHARGE 3/30/84
SRT 4/2/84 CPC/DESIGN ORG. _____

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

Pipe Support

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

As part of the review of the pipe support re-inspection program, ICV reviewers noted that Lesson Plan Rev. 4 for PQCI-P-2.30, Rev. 3 omitted Activity 3.4, instructions for snubber assemblies.

DESCRIPTION OF RESOLUTION:

The resolution was focused upon verifying that, even though the Lesson Plan omitted instructions for snubber assemblies, the trainees did in fact receive instructions for inspecting snubber assemblies. ICV reviewers received assurance from CPC in the form of memos initiated by cognizant and responsible MPQAD/Training personnel which stated explicitly that even though the formal, approved Lesson Plan did not include instructions addressing Activity 3.4 of PQCI P-2.30, the course instructor noted the omission prior to the training sessions and provided the required training. This course of action was followed for Lesson Plan Revs. 3 & 4. All other Lesson Plan Revs. (0, 1, 1A, 2, & 5) were reviewed and found to contain the pertinent training instructions.

RESOLUTION BASED UPON FOLLOWING DOCUMENTATION:

- o CPC Memo, O.D. Lanham to Historical File dated 9/29/83
- o CPC Memo, E.M. Dahms to Historical File dated 2/27/84
- o Pertinent pages from the following Lesson Plan revisions for the indicated PQCI P-2.30 Revs.

(See attached sheet.)

COMMENTS BY SRT (IF REQUIRED):

SIGNATURE DBZ
FINDING RESOLUTION
REPORT ORIGIN. (LTR)
3/27/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
3/29/84
DATE

JB
PRINCIPAL-IN-CHARGE
3/30/84
DATE

DKD
SRT (IF REQUIRED)
4/2/84
DATE

Attachment to 3201-008-Z-091

Resolution Based Upon Following Documentation (Continued)

<u>LP Rev</u>	<u>PQCI Rev</u>
0	A
1	0
1A	0
2	1
3	2
4	3
5	4

**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_092
REV. NO. _____

DATES REPORTED TO: LTR 3/7/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/27/84
PRINCIPAL-IN-CHARGE 3/30/84 CPC/DESIGN ORG. _____

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

Pipe Supports

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Pipe Supports - Topic 1.3-1c, Review of Selected Verif. Act. (Overinspection Programs)

DESCRIPTION OF CONCERN:

Within the hanger over-inspection program, QCE's who are being qualified are first given a listing of pipe supports that are available for inspection. The qualifying QCE is then afforded the opportunity to select the support which he/she finds through observation to be accessible, lighted, clean and with unpainted welds. These activities are undertaken prior to conducting the "Performance Demonstration" portion of the "Capability Demonstration" to Instruction 7220/P-2.30, Reinspection of Pipe (Component) Supports.

SIGNIFICANCE OF CONCERN:

The selection of the pipe support for the "Performance Demonstration" by the qualifying quality control examiner may introduce a bias in the "capability demonstration" by potentially allowing a qualifying QCE to select a hanger or support with which he/she is most familiar.

RECOMMENDATION _____ OR RESOLUTION X _____:

The resolution of this confirmed item is based upon information presented to ICV reviewers by CPC which addresses the significance of concern and the recommendation presented in C-092 specifically:

- (1) As of 10/15/83, Level III's designate which hanger/s a qualifying QCE will use for his/her performance demonstration as opposed to allowing the qualifying QCE to select the hanger/s.
- (2) During the period when the practice was used which allowed the (See Attachment)

COMMENTS BY SRT (IF REQUIRED):

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

ANSI/ASME N45.2.6-1976 Qualifications of Inspection, Examination and Testing Personnel for Nuclear Power Plants.

SIGNATURE DBT
OCR ITEM REPORT
ORIGINATOR
3/7/84
DATE

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3/7/84
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FOR PROJECT TEAM
3/27/84
DATE

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PRINCIPAL-
IN-CHARGE
3/30/84
DATE

SRT (IF REQUIRED)

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Attachment to 3201-008-R-092

Resolution (Continued)

QCE to select the hanger, CPC provided sufficient assurance that the practice did not introduce an unfavorable bias. This assurance was in the form of statements which more fully described the timing and the extent of the process used by Level III's during the performance demonstration.

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

CLASS: SAFETY X NON-SAFETY _____

FILE NO. 3201-008
DOC NO. 3201-008-F-093
REV. NO. _____

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 3/19/84 PRINCIPAL-IN-CHARGE 3/29/84
SRT 3/30/84 CPC/DESIGN ORG. _____

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

Review of controlling specification for the installation of HVAC system components
Construction/Installation Documentation Review, Topic IV.2-3c.

DESCRIPTION OF FINDING:

Deviations from welding standards AWS D9.1-80 and D1.1-79 noted in Project Specification 7220-M-151A, Rev. 15, (detailed in OCR 3201-008-C-093), were allowed without sufficient engineering justification.

SIGNIFICANCE OF FINDING:

The specification of limits on the acceptability of welds which are not in direct compliance with pertinent codes and standards may result in the acceptance of weldments which are not in compliance with applicable codes & standards and which have not been evaluated from a design standpoint.

RECOMMENDATION:

Based upon CPC responses, TERA was provided assurance that appropriate actions had been initiated to reconcile items noted by TERA in OCR 3201-008-C-093. These actions were initiated prior to TERA's review. These actions confirmed the inconsistencies noted in Confirmed Item C-093. The intent of this Finding is to retain the noted inconsistencies as Findings pending resolution of CPC Audit Finding Report MSA-83-3-06F. As part of the actions undertaken by CPC to resolve AFR MSA-83-3-06F, an engineering evaluation is currently being conducted to address the acceptability of deviations from established welding codes & standards. ICV reviewers will review & evaluate the resolution to
AFR MSA-83-3-06F

COMMENTS BY SRT (IF REQUIRED):

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

OCR 3201-008-C-093 Specification 7220-M-151A AFR: MSA-83-3-06F
AWS D1.1-79; AWS D9.1-80 CPC letter Schaeffer/Wood to Poser dated 2/3/84

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FINDING REPORT
ORIGINATOR (LTR)

3/5/84

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FOR PROJECT TEAM

3/19/84

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PRINCIPAL-IN-CHARGE

3/29/84

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SRT (IF REQUIRED)

3/30/84

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 094
REV. NO. _____

DATES REPORTED TO: LTR 3/5/84 SRT 3/30/84 PROJECT TEAM/PROJECT MGR. 3/19/84
PRINCIPAL-IN-CHARGE 3/29/84 CPC/DESIGN ORG. _____

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

Duct Sections and Duct Hangers and Supports within the CR HVAC System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Physical Verification of Components & Commodities in the CR HVAC System: Topic IV.2-3c

DESCRIPTION OF CONCERN:

Based upon the results of the construction/installation documentation review, ICV reviewers statused selected components and commodities within the CR HVAC system sample boundaries as "complete" or "incomplete" depending upon information recorded on available quality verification documentation. Of forty-two (42) items initially selected for review, seven (7) items were statused as complete and therefore eligible for a physical verification review. Upon conducting a physical verification of the seven (7) items, the following inconsistencies were noted. (See attached page.)

SIGNIFICANCE OF CONCERN:

An inconsistency noted in the Description of Concern may be classified as either a defect or as an example of poor workmanship. The net effect is a situation wherein the structural integrity of the weldment or flange connection is placed into question.

RECOMMENDATION _____ OR RESOLUTION X _____:

Based upon CPC response to items noted in the Description of Concern, this item is considered resolved.

Item 1: At time of TERA inspection, this component had been/was in the process of being destatused as part of CR HVAC weld testing program.

Item 2: This weld subsequently brushed to bare metal by CPC and reinspected by two inspectors. No lack of fusion was found. Additionally, "waviness" in duct work deemed acceptable within criteria guidelines. (See attached page.)

COMMENTS BY SRT (IF REQUIRED):

Ensure that CR HVAC sample be expanded to replace the items previously inspected and noted in this OCR.

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

BPCo Dwg. 7220-M515, Sh. 3 CPC Letter Schaeffer/Wood to Poser dated 2/3/84
Zack Dwg. V25 Sh's 3 & 3B

SIGNATURE(S):

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OCR ITEM REPORT
ORIGINATOR
3/5/84

DATE

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LTR
3/5/84

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HAL
PROJECT MANAGER
FOR PROJECT TEAM
3/19/84

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PRINCIPAL-
IN-CHARGE
3/29/84

DATE

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SRT (IF REQUIRED)
3/30/84

DATE

Description of Concern (Continued):

- 1) Attachment weld of vertical members of Hangers 71 to 70 (see Section C, Dwg. C-884) has a crater crack and lack of fusion in weld on "west" face at the bottom of the weld. Also welds attaching top of "north" vertical leg of hanger #71 and top of "south" vertical leg of hanger #70 to existing building steel are partially overlapping each other in the crater areas of fillet weld stops on both "east" and "west" faces.
- 2) Stiffener in mid-section of duct #50, "east" side of bottom capturing member, has a continuous weld for the 40" width of the duct (opposite side is "stitch" welded). The 40" weld has distorted the bottom plane of the duct and there are indications of lack of fusion along the 40" weldment.
- 3) Bolted Flange Connection, Duct 123 to Damper OMO-6508B:
The "north" vertical flange, first and fifth bolts from the bottom do not have washers; second, third, and fourth bolts from the bottom have bent washers preventing full contact of the washer; bottom flange has two loose nuts.
- 4) Bolted Flange Connection, Duct 164A to Damper OFV-6505B:
"west" vertical flange has four loose nuts and the threaded end of bottom bolt is in contact with a vertical member of a support; top flange has one loose nut.

Resolution (Continued):

Items #3 & #4: Per the Inspection Plan, these components are considered part of the dampers, not the duct work. Since the dampers had not been completed nor prepared for final inspection, TERA's findings were premature.

**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-095
REV. NO. _____

DATES REPORTED TO: LTR 3/5/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/19/84
PRINCIPAL-IN-CHARGE 3/29/84 CPC/DESIGN ORG. _____

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:
Review of quality verification documentation associated with methods used to provide traceability to Zack welds and welder qualifications.

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Construction/Installation Documentation Review, Topic IV.2-3c.

DESCRIPTION OF CONCERN:

During the process of conducting a review of CR HVAC welding documentation to verify utilization of correct welding procedures as performed by qualified welders, the following was noted: there appears to be no means available for an inspector to verify that a welder was qualified at the time he welded on a specific fabricated duct or support in the CR HVAC system. This statement is made based upon a review of the applicable records, a cursory review of processes in place at the time welding was performed and discussions with cognizant personnel. The following understandings are noted: (See attached sheet.)

SIGNIFICANCE OF CONCERN:

Since no in-process weld inspection is performed, there is no check on the contractor properly performing to his procedure and maintaining the welder qualification records. According to AWS D1.1-79 and AWS D1.3-78, the welder's qualification remains in effect indefinitely unless the welder is not engaged in a given process of welding for which he is qualified, for a period exceeding six months. Since no dates are recorded, and the general WPS is the only weld callout, the proof of qualification maintenance required by AWS D1.1-79 and AWS D1.3-78 does not exist and cannot be generated.

RECOMMENDATION _____ OR RESOLUTION X _____:


Based upon CPC response contained in CPC letter Schaeffer/Wood to Poser dated 2/3/84, ICV reviewers have resolved this confirmed item. Resolution is based upon the following:
1. A method is available to MPQAD to indirectly verify the status of a welder's qualification at the time a specific welder performed a specific weld. However, the method is not foolproof and may not provide unequivocal evidence of a welder's qualification status at the time a weld was performed for 100% of the welds. (See attached sheet.)

COMMENTS BY SRT (IF REQUIRED):

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

AWS D1.1-79
AWS D1.3-78

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OCR ITEM REPORT
ORIGINATOR
3/5/84
DATE


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3/19/84
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3/29/84
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SRT (IF REQUIRED)

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Description of Concern (Continued)

1. The Zack Foreman does not document the date or the piecemarks of the hanger or duct assembly that a particular welder has fabricated. It is possible for the requirements of three codes and many welding procedures to be employed. It is the responsibility of the Zack Foreman to assure that the welder is qualified at the time of welding for the particular joint to be welded.
2. The MPQAD Inspector logs the welder and procedure used from information given to him by the Zack Foreman.
3. The inspection by MPQAD occurs after all welding is completed. There may be a considerable lag time between completion of welding and final inspection.
4. Prior to the latest system of three digit welding procedure specification (WPS) numbers, the WPS was general in nature and did not designate a unique "code-process-base material-joint configuration" combination.
5. Quality verification records only indicate which WPS was applied to the weldment, which welder(s) performed welding on the item and the date(s) of inspection. The records do not indicate the date(s) of welding nor the PQR's used. Based upon available and recorded data it is difficult to discern how an Inspector can verify a welder's qualification since neither the date of welding nor the specific PQR is recorded.

Resolution (Continued)

2. CPC has modified the recording requirements during welding by requiring that all welds be traceable to a specific welder and date of welding. These data were not previously recorded.
3. Two new welder surveillance programs have been implemented by Zack & CPC to scrutinize more closely the welder's qualifications and his actual performance during in-process welding activities.
4. Upon recommencement of the Construction/Installation Documentation review, ICV reviewers will necessarily evaluate weld travelers and inspection records thus affording additional opportunities to verify the adequacy and effectiveness of items addressed in Items 1 through 3 above.

**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 - 096
REV. NO. _____

DATES REPORTED TO: LTR 3/27/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/30/84
PRINCIPAL-IN-CHARGE 4/4/84 CPC/DESIGN ORG. _____

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

Review of quality verification documentation associated with CR HVAC Duct Sections #50 and 159.1B and Duct Support Hangers #71 and 209B.

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Construction/Installation Documentation Review, Topic IV.2-3c.

DESCRIPTION OF CONCERN:

In reviewing quality verification documentation packages associated with selected components and commodities within the CR HVAC system the following inconsistencies were noted:

Duct Section #50: a) Documentation of rework to correct deficiencies noted in NCR's 44 and A442 do not include identification of welder or weld procedure.
b) Documentation of rework to correct deficiencies noted in NCR 145 does not include identification of weld procedure. (See attached page.)

SIGNIFICANCE OF CONCERN:

The gaps and inconsistencies in recorded data preclude the ability to easily and quickly verify the quality of the installation by reviewing the applicable verification documentation.

RECOMMENDATION _____ OR RESOLUTION X _____:

Based upon CPC's providing additional information and documentation not previously reviewed by ICV reviewers the items in the Description of Concern have been eliminated.

COMMENTS BY SRT (IF REQUIRED):

ICV reviewers during the process of conducting documentation reviews should exhaust all available sources of information prior to reaching the Confirmed Item stage for noted inconsistencies. Even though the Confirmed Item is our vehicle to extract supplemental data & information which was not readily apparent during the review, it

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

(See attached page.)

BPCO Dwg. 7220-M-525, Sh. 3 NCR's 44, 145 & A442
Zack Dwg. V25 Sh. 3 & 3B

SIGNATURE(S):

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OCR ITEM REPORT
ORIGINATOR
3/27/84
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PROJECT MANAGER
FOR PROJECT TEAM
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PRINCIPAL-
IN-CHARGE
4/4/84
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Description of Concern (Continued)

- Duct Section #159.1B: Inspection documentation indicates "seal welds" of flange to flange welding but does not indicate the weld procedure used.
- Hanger #71: Zack dwg. V25 Sh. 3B shows hanger 71 as Detail 14 on BPCo Dwg. C-874. Dwg. C-874 does not have a Detail 14. Actual installation matches Detail 14 of BPCo Dwg. C-878, as defined on BPCo Dwg. C-884.
- Hanger #209B: Inspection Report #188 indicates that Detail 1 on Drawing 7220-C-880 was used during the inspection. There is no Detail 1 on Dwg. C-880.

Comments by SRT (Continued)

is felt that more exhaustive effort conducted during the initial review would have precluded this Confirmed Item Report. PM should ascertain why the ICV reviewers were outside specified review sample and take necessary action to remedy in future.

**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-145
REV. NO. _____

DATES REPORTED TO: LTR 3/21/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/5/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

Control Room HVAC Instrumentation

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

I.19-3 Control Systems

DESCRIPTION OF CONCERN:

See attached.

SIGNIFICANCE OF CONCERN:

See attached.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

1. M-527 sh 3(Q) 2. M-465 sh 1(Q)

SIGNATURE(S):

DMW
OCR ITEM REPORT
ORIGINATOR

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3/21/84
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4/9/84
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DESCRIPTION OF CONCERN

HVAC duct layout and system configuration were reviewed by comparing the physical arrangement on Ref. 1, Revision 22 to the P&ID (Ref.2), Revision 9. That review indicated a number of areas of inconsistency.

The following differences were noted:

1. Radiation Monitoring elements ORE 6513B and ORE 6514B are physically located downstream of the Makeup Air Filter by-pass branch and the P&ID shows them upstream of the branch.
2. OAE 6515B and OAE 6516B are physically located upstream of isolation valve OMO 6501. They are not shown on the P&ID.
3. OAE 6512B and OAE 6522B are located in close proximity along the same duct; the P&ID shows OAE 6521B upstream of OAE 6522B and the layout is physically the opposite. The layout also labels these devices as switches (OASH), not elements (OAE), whereas the P&ID shows the switch and the element as separate devices.
4. OFE 6520B1 is not shown in the layout drawing. The P&ID locates the flow element upstream of the Makeup Filter Unit.
5. The ductwork identification system used on the P&ID incorporates a size corresponding to the equivalent round duct diameter. Comparing a small number of specified equivalent diameters to the equivalent diameter calculated using the size shown on the layout drawing, there appear to be minor differences. All the duct is slightly smaller than the P&ID calls for, and in one case a 10% difference was noted.

Note 9 of the layout drawing stated, "This dwg was last checked against Rev. 4 of P&ID M-465 SH 1 on 1/15/82." Revision 5 of the P&ID had already been issued a year earlier (1/19/81). Revision 22 of Reference 1 was issued on 9/23/83 indicating it had been last checked against a P&ID which was now 32 months out of date. Based on the results of the initial review a second review was performed against Rev. 4 of the P&ID to correspond to the drawing check which was performed on 1/15/82, according to the drawing note. Revision 11 of Reference 1 was used since it was the current Revision on 1/15/82. The drawings were found to be inconsistent in the areas noted above at the time that they were reported to have been checked. In the case of Item 3, OAE 6521B and OAE 6522B were in the correct order but at that time not correctly located with respect to the makeup filter by-pass.

SIGNIFICANCE OF CONCERN:

The function of instruments can be critically influenced by location. For example, in item 1 above, the instrument elements are located in a dead leg of piping when the by-pass line isolation valve (OXV 6511B or OXV 6512B) is closed. Detection of radiation level in the incoming flow could be inadequate and control room isolation would be affected. The issue raised in item 5 is not likely to have any technical consequence, because pressure drop in the duct is calculated using actual duct sizes, not P&ID equivalents, but inconsistencies in the documentation do exist. Collectively, the observed inconsistencies may indicate inadequate control of the design drawings which utilize the P&ID as input.



**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. 161
REV. NO. _____

DATES REPORTED TO: LTR 4/2/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/4/84
PRINCIPAL-IN-CHARGE 4/10/84 CPC/DESIGN ORG. _____

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

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):
Topic I.16-2 Electrical Characteristics (DG)

DESCRIPTION OF CONCERN:

Class 1E motor operated valves require > 80% rated voltage per reference 1. Vendor diesel generator tests demonstrated an actual voltage drop of 17.5% per reference 2. QPE-6, Rev. 5, voltage regulation, assumes voltage drops from load centers to devices to be 5%. This yields an overall voltage drop > than that specified for valves.

SIGNIFICANCE OF CONCERN:

Potential degradation of operability and/or qualified life of motor operated valves.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

1. FSAR Section 8.3.1.1.8, Rev. 33
2. 7220-M18-374-2, Rev. 1, DG Qualification Test Report

SIGNATURE(S):

<u>GR</u>	<u>GES</u>	<u>HAL</u>	<u>JWB</u>	_____
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<u>4/2/84</u>	<u>4/3/84</u>	<u>4/10/84</u>	<u>4/10/84</u>	_____
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**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. 162
REV. NO. _____

DATES REPORTED TO: LTR 3/13/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/27/84
PRINCIPAL-IN-CHARGE 4/10/84 CPC/DESIGN ORG. _____

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

SEP System - Motors

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

I.16-2 Electrical Characteristics, Design Criteria

DESCRIPTION OF CONCERN:

FSAR Section 8.3.1.1.8 (Rev. 49) states that the electrical system is designed such that the total voltage decrease on the Class 1E motor circuits is less than 30% of the nominal motor voltage. It also states that certain motors are specified with accelerating capability at 80% nominal voltage at their terminals, yet does not address how these motors will be assured sufficient starting voltage.

SIGNIFICANCE OF CONCERN:

Criteria do not adequately define requirements to consider limiting conditions for motor start voltage, which may lead to inadequate design for certain motors.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

As listed in description above.

SIGNATURE(S):

GES
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ORIGINATOR
3/13/84
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FOR PROJECT TEAM
4/10/84
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4/10/84
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**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-163
REV. NO. _____

DATES REPORTED TO: LTR 3/13/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/27/84
PRINCIPAL-IN-CHARGE 4/10/84 CPC/DESIGN ORG. _____

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

SEP System - Diesel Generator

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

DG Codes and Standards

DESCRIPTION OF CONCERN:

FSAR Table 3.2-3 Sheet 2 (Rev. 49) states that the diesel generator design codes include IEEE 387-1972. However, FSAR Section 8.1.4.3 discusses conformance to IEEE 387-1977 and does not mention IEEE 387-1972 in that discussion. However, in the lead-in paragraph on page 8.1-4 (Rev. 49) 387-1972 is mentioned. Also, FSAR Appendix 3A Reg. Guide 1.9 addresses compliance as relating to IEEE 387-1977. It is not clear which version of IEEE 387 really applies.

SIGNIFICANCE OF CONCERN:

If the criteria that the DG's are to meet are not clear, then inappropriate versions of standards may be used, potentially leading to an end product of differing quality than expected or intended.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

As listed in description above.

SIGNATURE(S):

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OCR ITEM REPORT
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FOR PROJECT TEAM
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4/10/84

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**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 - 165
REV. NO. _____

DATES REPORTED TO: LTR 3/13/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/27/84
PRINCIPAL-IN-CHARGE 4/10/84 CPC/DESIGN ORG. _____

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

SEP System - Electrical Bus Voltages

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic I.16-2 - Electrical Characteristics, Design Criteria

DESCRIPTION OF CONCERN: B&W electrical criteria specify requirements for bus voltages as follows: vital buses - 120 VAC +5% and NSB buses - rated voltage +10%. Voltage ranges are not indicated as nominal steady state or absolute (i.e., not to be exceeded) nor is permissible momentary voltage dip addressed. Interpretations may be made that are not appropriate or have adequate basis. For example, QPE-6, Rev. 5, states that the unit aux. system voltage is acceptable when the generator voltage is $\geq .95$ per unit. However, with the generator voltage at 0.95 per unit and 2P01A starting, voltage dips in excess of 10% result.

SIGNIFICANCE OF CONCERN:

B&W criteria may not be met, resulting in improper functioning of equipment.

RECOMMENDATION _____ OR RESOLUTION _____:

COMMENTS BY SRT (IF REQUIRED):

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.): Calc. QPE-6 (Rev. 5) on Voltage Regulation. B&W BOP criteria 36-1004513-02 for plant electric systems sections 3.3.3 and 3.3.4.4. (Bechtel Doc. #7220-M1.0J-28-3).

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ORIGINATOR
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4/10/84
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JWB
PRINCIPAL-
IN-CHARGE
4/10/84
DATE

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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_166
REV. NO. _____

DATES REPORTED TO: LTR 3/13/84 SRT _____ PROJECT TEAM/PROJECT MGR. 3/27/84
PRINCIPAL-IN-CHARGE 4/10/84 CPC/DESIGN ORG. _____

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

SEP System - Conduit and Cable Tray System

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topic II.3-2, Pipe/Eq. Support, Seismic Criteria

DESCRIPTION OF CONCERN:

FSAR Table 3.2-1 Sheet 13 (latest Rev. is 30) does not indicate that the AC power systems conduit and cable tray system is seismic category I, as does sheet 14 (Rev. 30) for the DC systems. Also, the instrument and other cable on sheet 13 is indicated as seismic category I, instead of NA like other cables.

SIGNIFICANCE OF CONCERN:

This item appears to be a typographical error in Table 3.2-1.

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.):

As listed in description above.

SIGNATURE(S):

GES
OCR ITEM REPORT
ORIGINATOR
3/13/84
DATE

GES
LTR
3/13/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
4/10/84
DATE

JWB
PRINCIPAL-
IN-CHARGE
4/10/84
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-168
REV. NO. _____

DATES REPORTED TO: LTR 3/28/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/9/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

Aux. Bldg., CR-HVAC System, Duct Support

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

II.3-3 Duct Support

DESCRIPTION OF CONCERN:

In the referenced calculation, sh 8 states: (1) "The bottom of duct is welded to support member 4" and (2) "detail 10/C-885 gives no longitudinal support." Considering that the mentioned member 4 is welded to a massive steel column, the second statement seems incorrect.

SIGNIFICANCE OF CONCERN:

In the evaluation of the support mentioned, longitudinal support force has been neglected because of an erroneous assumption. Support member 4 and its welds have been evaluated neglecting the longitudinal support forces. If errors of this nature occur systematically, they may have significant cumulative effect.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP

COMMENTS BY SRT (IF REQUIRED):

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

Bechtel calculation 21G(4.154)(Q), Rev. 0

SIGNATURE(S):

JKA
OCR ITEM REPORT
ORIGINATOR
3/28/84
DATE

CPM
LTR
3/28/84
DATE

HAL
PROJECT MANAGER
FOR PROJECT TEAM
4/9/84
DATE

JWB
PRINCIPAL-
IN-CHARGE
4/9/84
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-169
REV. NO. _____

DATES REPORTED TO: LTR 3/29/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/9/84
PRINCIPAL-IN-CHARGE 4/9/84 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:

Calculation SQ-148-J(Q), which assesses the impact of the modal mismatch between CE 207 and CE 800, indicates that corrected analyses produced both horizontal and vertical accelerations at mass points significantly larger than the ones used in specs G-7.

SIGNIFICANCE OF CONCERN:

Analysis and design may not be conservative.

RECOMMENDATION X OR RESOLUTION _____:

Process per PQAP

COMMENTS BY SRT (IF REQUIRED):

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

Calc. SQ-148-J(Q)

SIGNATURE(S):

CPM
OCR ITEM REPORT
ORIGINATOR

3/29/84
DATE

CPM
LTR

3/29/84
DATE

HAI
PROJECT MANAGER
FOR PROJECT TEAM

4/9/84
DATE

JWB
PRINCIPAL-
IN-CHARGE

4/9/84
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- 170
REV. NO. _____

DATES REPORTED TO: LTR 3/28/84 SRT _____ PROJECT TEAM/PROJECT MGR. 4/9/84
PRINCIPAL-IN-CHARGE 4/9/84 CPC/DESIGN ORG. _____

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

Aux. Bldg., CR-HVAC System, Duct Support

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

II.3-3 Duct Support

DESCRIPTION OF CONCERN:

See attached

SIGNIFICANCE OF CONCERN:

Evaluation for the specific support covered in the referenced calculation is based on analysis where the errors mentioned above were detected. If similar errors appear systematically throughout all the HVAC system, they may have significant cumulative effect.

RECOMMENDATION X OR RESOLUTION _____

Process per PQAP

COMMENTS BY SRT (IF REQUIRED):

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

Bechtel calculation 29 D.268(Q), Rev. 0

SIGNATURE(S):

JKA

CPM

HAL

JWB

OCR ITEM REPORT
ORIGINATOR

LTR

PROJECT MANAGER
FOR PROJECT TEAM

PRINCIPAL-
IN-CHARGE

SRT (IF REQUIRED)

3/28/84

3/28/84

4/9/84

4/9/84

DATE

DATE

DATE

DATE

DATE

1. Referenced calculation, sh 5:

Incorrect procedures have been used in calculating Δ_x at pt. 4. For example, when forces as shown in the sketch on sh 5 act on member 1-4, contrary to what is shown in the calculation, no rotation of this member occurs as the resultant forces load the member only axially. Therefore, displacement of members 1-4 and 3-6 is not compatible at pt. 4.

2. Sh 5:

In calculating vertical displacement at pt. 4, the length of section 4-6 is taken as 60 inches, whereas the sketch on sh 2 shows this length to be 72 inches.

3. Sh 8:

In analyzing the member spanning from pt. 3 to pt. 6, improper model is used for the member. Calculation as performed assumes a pinned support at pt. 3 in x-direction, whereas a spring representing the flexibility of member 2-3 should be modeled at pt. 3.

4. Sh 9:

The moment distribution calculation for member 3-6 using Cross's method is erroneously performed. (The model of the member for which the calculation is performed is itself erroneous, as indicated in item 3 above.) Member 3-6 is assumed to be pinned at point 3; however, in the course of calculation moment is "carried over" to this point.

ATTACHMENT 4

OCR/FINDING STATUS SUMMARY
MSR 11 (4/17/84)REVIEW CATEGORY

<u>OCR/Finding Type</u>	<u>AFW System Performance Requirements</u>	<u>CR-HVAC System Performance Requirements</u>	<u>SEP System Performance Requirements</u>	<u>System Protection Features</u>	<u>Structures That House The Systems (Civil/Structural)</u>	<u>Construction Verification</u>	<u>Totals</u>
<u>Active Status</u>							
Open Items	4 (4)	2 (2)	2 (0)	1 (2)	2 (2)	2 (2)	13 (12)
Confirmed Items	1 (3)	3 (2)	12 (8)	9 (7)	24 (23)	0 (5)	49 (48)
<u>Findings</u>	<u>0 (0)</u>	<u>0 (0)</u>	<u>0 (0)</u>	<u>0 (0)</u>	<u>2 (2)</u>	<u>10 (10)</u>	<u>12 (12)</u>
Subtotals	5 (7)	5 (4)	12 (9)	10 (9)	28 (26)	12 (17)	74 (72)
<u>Inactive Status (Dispositioned)</u>							
Resolved Items	28 (26)	9 (9)	3 (3)	6 (5)	10 (10)	4 (0)	60 (53)
Resolved Findings	3 (3)	0 (0)	0 (0)	0 (0)	0 (0)	7 (6)	10 (9)
<u>Observations</u>	<u>8 (8)</u>	<u>6 (6)</u>	<u>5 (5)</u>	<u>4 (3)</u>	<u>3 (3)</u>	<u>0 (0)</u>	<u>26 (25)</u>
Subtotals	39 (37)	15 (15)	8 (8)	10 (8)	13 (13)	11 (6)	96 (87)
Totals	44 (44)	20 (19)	22 (16)	20 (17)	41 (40)	23 (23)	170 (159)

Notes:

- Figures in parentheses are from previous Monthly Status Report (MSR 10).
- Review categories correspond to IDV and ICV scope matrices and the currently planned sequence of IDCVP topical reports. The AFW, CR-HVAC, and SEP System Performance Requirements categories include all topics under Roman I of the respective IDV scope matrices. The System Protection Features and Civil/Structural categories include all topics under Roman II and III, respectively, for the combination of all systems. The Construction Verification category includes all ICV topics.