

TERA

March 8, 1984

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Administrator, Region III
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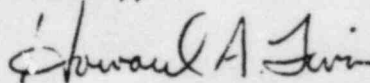
Mr. D. G. Eisenhut
Director, Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket Nos. 50-329 OM, OL and 50-330 OM, OL
Midland Nuclear Plant - Units 1 and 2
Independent Design and Construction Verification (IDCV) Program
Meeting Summaries

Gentlemen:

The seventh meeting on Confirmed Items and Findings was held on February 29, 1984. A meeting was held on March 1, 1984 to discuss outstanding issues in the civil/structural review area. Summaries are provided (Attachments 1 and 2, respectively) to document items discussed and actions agreed upon by the participants.

Sincerely,



Howard A. Levin
Project Manager
Midland IDCV Program

cc: See Attached Sheet

Enclosure

HAL/si

MAR 12 1984

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2

March 8, 1984

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D. Budzik, CPC
D. Quammy, CPC (site)
R. Whitaker, CPC (site)
D. Hood, NRC
J. Taylor, NRC, I&E
T. Ankrum, NRC, I&E
J. Milhoan, NRC, I&E
R. Burg, Bechtel
J. Agar, B&W
J. Karr, S&W (site)
IDCV Program Service List



TERA CORPORATION

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AND CONSTRUCTION VERIFICATION PROGRAM

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ATTACHMENT I

SUMMARY OF SEVENTH MEETING ON CONFIRMED ITEMS AND FINDINGS

February 29, 1984
Midland IDCVP Program

A meeting was held on February 29, 1984 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in the January IDCVP Monthly Status Report dated February 15, 1984 and to status other outstanding items identified previously. Exhibit 1 identifies the attendees of the meeting which included representatives of TERA, CPC, Bechtel, and NRC. Exhibit 2 presents the agenda used for the meeting.

Howard Levin, TERA, opened the meeting with a discussion of the agenda and a summary of the purpose of the meeting. He noted that a discussion of item III on the agenda (pertaining to plans for completion of the IDCVP) was being postponed at the request of NRC, acting on another request by GAP to hold the discussions in Bethesda, MD. The NRC has set this meeting for March 13, 1984 at 1:00 PM in their offices. TERA acknowledged the receipt of project responses to previous OCRs and stated that those responses were being evaluated. The meeting then proceeded with its primary objective which is to ensure that all participants have a complete understanding of the technical issues expressed as Confirmed Items in the January Monthly Status Report. The responsible TERA personnel described each item, followed by discussion by either CPC or Bechtel, who were requested to identify additional information that may have bearing on the issues or to provide clarification which would allow these issues to be dispositioned directly.

The status of previously outstanding Confirmed Items and Findings was also discussed except for those noted in the meeting announcement. The meeting announcement listed certain OCRs as being on hold or that sufficient information is available for TERA to disposition the item. A summary of the significant aspects of the discussion is provided in Exhibit 3 along with any course of action identified.

ATTACHMENT 1, EXHIBIT 1

MIDLAND NUCLEAR PLANT - UNITS 1 AND 2

INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

SEVENTH OCR STATUS REVIEW MEETING

FEBRUARY 29, 1984

<u>NAME</u>	<u>AFFILIATION</u>
ROB BURG	BECHTEL / NUCLEAR
FRED SCHOFER	BECHTEL / NUCLEAR
Don T. ...	TERA
Bob Whitaker	CPCO / MPQAD
Hai-Beh Wang	NRC / IE / DQASIP
JAMES MILHOAN	NRC / IE / DQASIP
Frank DOUGHERTY	TERA Corp.
HOWARD LEVIN	TEILA CORP.
Ken Cook	USNRC
Pat Hiland	USNRC
Lionel Bates	TERA
G. Sethu	TERA
LOLL GIBSON	CONSUMERS POWER
MICHELLE LOZIER	BECHTEL / MECH. BOP
B. K. SHETB	BECHTEL / MECH. BOP.
Mike Gerding	Bechtel / Control Systems
David A. Horvath	Bechtel / Mechanical
G. SINGH	Bechtel / Control Systems
JENNIS KELLY	BECHTEL / ELECTRICAL
* Bob HAMM	CPCO / IFC
1 Unit Julka	Bechtel / Electrical

* PART TIME

MIDLAND NUCLEAR PLANT - UNITS 1 AND 2
 INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
 SEVENTH OCR STATUS REVIEW MEETING
 FEBRUARY 29, 1984

<u>NAME</u>	<u>AFFILIATION</u>
MICHAEL L. Henry	Bechtel - PLANT DESIGN
John LeGette	Bechtel - plant Des, Staff
Prem Gupta	Bechtel - Plant Design
Suresh Patel	Bechtel - Mechanical
VISWA S KUMAR	BECHTEL - MECHANICAL
K. C. Prasad	Bechtel - Nuclear staff
Doug WITT	TERA CORP.

ATTACHMENT 1, EXHIBIT 2

MIDLAND INDEPENDENT DESIGN AND
CONSTRUCTION VERIFICATION PROGRAM

AGENDA FOR FEBRUARY 29, 1984
OCR STATUS REVIEW MEETING
BECHTEL OFFICES
ANN ARBOR, MICHIGAN

I. Estimated Time

Start: 9:00 AM
Lunch: 12:00 PM to 12:45 PM
Adjournment: 3:00 PM

II. Discussion of Confirmed Items, Findings, Observations, and Resolved Items

<u>Item</u>	<u>TERA Lead</u>
A. Construction	
● F-047	Tulodieski
● F-049	"
● F-050	"
● F-054	"
● F-055	"
● F-056	"
● F-091	"
● C-092	"
● C-093	"
● C-094	"
● C-095	"
● C-096	"
B. Mechanical/Systems	
● R-025*	Dougherty
● R-074*	Witt
● C-129	Witt
● C-112	Setka
● C-133	Setka
● R-081*, B-142*, B-143*	Dougherty
● C-148*, C-149*, C-150*	Setka
● B-152*	Dougherty

ATTACHMENT 1, EXHIBIT 2
(CONTINUED)

C. Electrical

● C-022	Bates
● R-039*	Bates
● R-040*	Bates
● C-097	Bates
● C-109	Setka
● C-110	Setka
● C-111	Setka
● C-132	Setka
● C-134	Setka
● C-135	Setka
● B-133*	Setka
● C-141*	Setka
● C-146*	Setka
● C-147*	Setka
● B-151*	Setka
● C-153*	Bates

(Note: Rev. 1 of this OCR is attached.
Rev. 0 inadvertently mislabeled switch
3965B as 3965A. This switch is located
on panel 2C114.

III. Discussion of programmatic issues

- TERA plans for completion of the design verification
- Construction verification status and future plans

IV. Discussion of Action Items and Logistics for Information Exchange

- Notes:
1. Items are grouped to the degree practical to facilitate discussion and minimize manpower requirements during the entire meeting.
 2. Items that changed status during the January reporting period are denoted with an asterisk.
 3. The following OCRs have not reached a final disposition; however, further TERA or Midland Project actions have been identified during past public meetings. Accordingly, discussions are not contemplated by TERA unless the Midland Project has identified new information that is pertinent to the ongoing activities.

- | | |
|---------|---------|
| ● C-005 | ● C-088 |
| ● C-026 | ● F-031 |
| ● F-036 | ● C-038 |
| ● C-048 | ● F-043 |
| ● F-053 | ● F-052 |
| ● C-084 | ● C-087 |
| | ● C-089 |

ATTACHMENT I, EXHIBIT 3
DISCUSSION OF CONFIRMED ITEMS,
FINDINGS, OBSERVATIONS AND
RESOLVED ITEMS

F 3201-008-F-047. This Finding pertains to certain inconsistencies observed within the site storage and maintenance programs. Discussions were focused upon a Bechtel response to the Finding. ICV reviewers noted and identified the need for additional information and documentation necessary to clarify certain statements contained in the Bechtel response pertaining to:

- Valve 2LV-3975A1 - Reconcile an apparent discrepancy between a reference cited in the response for a CCI valve whereas the installed valve is manufactured by Copes Vulcan.
- Valve 2MO-3965A1 - Information necessary to differentiate between lubrication requirements for the Limotorque operator and those requirements for the valve itself.
- Transmitter 2FT-3969A - Information which would provide additional justification for not including the vendor's recommended storage instructions within Midland site storage procedures.
- Air Handling Unit 2VM-54A - Information which addresses an apparent departure from site-storage procedures relating to a megger requirement and procedures and instructions which controlled the Bechtel/Zack interface.
- Copy of the revised, unapproved site storage procedure FPG 5.000.

TERA agreed to document the specifics of our information requests in a letter to Bechtel's Mr. Robert Burg.

3201-008-F049. This Finding relates to an apparent deviation from cable separation criteria requirements. TERA advised that no new information had been generated in responding to the Finding and that ultimate disposition would

be delayed pending receipt and review of the Midland project inspection plan to be implemented in verifying cable separation criteria.

3201-008-F-050. This Finding pertains to a cable misrouting event observed during the verification of the cable reinspection program. Disposition is delayed pending TERA's receipt and review of the project's response to NCR-A-5000-6-CV.

3201-008-F-052. This Finding records certain apparent inconsistencies between vendor supplied documentation and that documentation specified as a requirement by Bechtel-prepared procurement documents. The discussions during the meeting were general in nature and were focused upon a Bechtel response to the Finding. ICV reviewers stated that the Bechtel response did not provide sufficient information to enable a disposition of all the items recorded by the Finding and that additional information would be required. TERA agreed to document the specifics of the information requests in a letter to Bechtel's Mr. Robert Burg.

3201-008-F-054. This Finding addressed certain apparent inconsistencies observed within certain Midland Project Quality Control Instructions (PQCI's). TERA advised that telecon discussions were held with cognizant CPC personnel in an attempt to gain additional information which would enable ICV reviewers to disposition this Finding. It was stated and agreed that ultimate disposition of this Finding would be delayed pending recommencement of the ICV Construction/Installation Documentation Review.

3201-008-F-055. This Finding records apparent inconsistencies observed within certain welding procedures and procedure qualification records. TERA advised that a formal, written response had not been received from Bechtel/CPC and requested information as to what activities had been undertaken to address this Finding. Bechtel agreed to advise TERA reviewers of a date by which ICV reviewers should expect a response.

3201-008-F-056. A CPC response to this Finding was discussed. This Finding concerns itself with apparent discrepancies in certain material test reports associated with Air Receiver 2T-93A and the AFW pump shafts. TERA stated that the response to Findings related to the Air Receiver 2T-93A were adequate and would serve to resolve the documented concerns of ICV reviewers. The Finding relating to the AFW pump shafts (no CMTR for shaft material in the QA data package) was discussed in detail. TERA advised that final disposition of this Finding could occur if CPC possessed sufficient assurance that the shaft material was in fact supplied in accordance with specification and BOM requirements. As an action item, CPC/Bechtel agreed to provide additional information which would serve to provide assurance that the shaft material complies with specification requirements.

3201-008-F-091. This Finding addresses the omission of Activity 3.4 from a Lesson Plan used to train personnel in conducting pipe hanger and support inspections. As a result of discussions with cognizant CPC personnel and a review of information received from CPC, ICV reviewers were prepared to disposition this Finding pending receipt and review of Lesson Plan Revisions used prior and subsequent to the Lesson Plan revision reviewed by TERA. CPC advised that the Lesson Plan revision used prior to the revision reviewed by TERA also did not include Activity 3.4 and advised of activities undertaken to investigate and reconcile this discrepancy. As an action item, CPC is to formally transmit a description of activities undertaken to reconcile the noted discrepancy with a complete and effective training program.

3201-008-C-092. This item recorded a process observed by TERA to possess the potential for introducing a bias in the manner with which inspectors were being qualified to conduct pipe hanger and support inspections. Discussions were focused upon two CPC documented responses to this item. TERA stated that the responses were adequate and will enable ICV reviewers to disposition this Confirmed Item as being resolved.

3201-008-C-093 thru -096. These Confirmed Items address certain inconsistencies observed by ICV reviewers as a result of conducting

documentation and physical verification reviews of installed commodities within the CR HVAC system. TERA advised that they were recently in receipt of CPC's formal response to the Confirmed Items and that a "first" review of the response would indicate that sufficient information and data were contained in the responses to enable ICV reviewers to disposition the Confirmed Items.

‡3201-008-R-025. CPC has provided additional documentation of available time for operator action following a tube rupture event. This documentation demonstrates that sufficient time is available for the operator to override the FOGG system by placing it in the manual mode. Thus, this item has been resolved.

3201-008-R-074. Bechtel has provided a calculation which serves as a basis for the resolution of this item concerning the temperature in the control room under blackout conditions. TERA considers this calculation to be adequate to resolve the concern.

3201-008-C-129. At the previous OCR meeting Bechtel verbally provided information to explain the apparent discrepancy in the isolation damper closing times. During the visit to Ann Arbor TERA personnel reviewed available documentation to verify the previously made verbal statements. The information indicates that the system is normally aligned so that the isolation damper which must close has a one-second closing time. Thus, TERA has reviewed sufficient information to allow this item to be dispositioned.

3201-008-C-112. Bechtel stated during the meeting that an approved calculation is expected to be released by the end of the week. This revised calculation will reflect the concerns raised by TERA as well as other new information which Bechtel has received. Upon receipt of this calculation TERA will review it and determine the disposition of C-112.

3201-008-C-113. Bechtel advised TERA in a letter dated February 24 that a response to C-113 will be available about April 16. During the meeting Bechtel stated that they had talked with the vendor, who has completed measurements of

air leakage, and that they had also completed calculations. Bechtel is requesting the vendor test data and is considering doing a calculation and forwarding it to TERA. TERA will review information as it becomes available and also evaluate current efforts of the TDI Owners' Group to determine whether and how Owners' Group efforts will be considered in the course of the completion of the IDVP.

^f 3201-008-R-081. This item was concerned with calculation FM-4117-28(Q). Bechtel has revised the calculation for reasons other than the TERA review. In the process of revising the calculation, Bechtel corrected the discrepancies noted in Confirmed Item C-081. Thus, this item is considered resolved because it was corrected as part of the normal design process. TERA also made two Observations with respect to the Confirmed Item. These Observations are 3201-008-B-142 and 3201-008-B-143.

3201-008-C-148. This Confirmed Item noted a lack of fire seals for one of the fuel oil day tank rooms. Bechtel stated that it has a penetration review program currently ongoing. They expect to respond to this Confirmed Item within ten days.

3201-008-C-149. Bechtel stated that they use NFPA standards as guidelines. When Bechtel states compliance with an NFPA standard they are indicating that they are in compliance with the intent of the standard. TERA noted the difficulty associated with evaluating commitments when the extent of the commitment made cannot be easily determined. Bechtel stated that they will respond to this item by the end of March.

3201-008-C-150. This item raised a concern with the extent of compliance with NFPA-72-D. Bechtel will respond to this item prior to the next meeting.

3201-008-C-022. TERA has sent a letter requesting additional information regarding testing the level control system for the AFW. CPC has reviewed the request for additional information and has prepared a response. During the meeting a discussion was held concerning the draft response. CPC stated that they expect that the test program will generally be consistent with TERA's

expectations, but may provide alternatives with respect to parameters measured. CPC stated that they will prepare a written response to TERA's letter.

3201-008-R-039. This item concerning the qualification of cables was resolved by Bechtel providing additional information, which TERA reviewed and concurred with.

3201-008-R-040. TERA performed an additional review of calculation QPE-17 and reviewed schematics associated with the AFW and CR-HVAC systems. These additional reviews found acceptable cable lengths. TERA also performed additional calculations which supported the project position that the cable lengths for the Midland project are consistent with their commitments.

3201-008-C-097. This item was concerned with potential single failures in the CR-HVAC system. At the last OCR meeting Bechtel provided verbal information regarding how the HVAC system met its design commitments. Prior to this meeting TERA reviewed the drawings to which Bechtel referred in the previous meeting. TERA stated that after the meeting they expect to review calculations available in Ann Arbor. The drawings plus the calculations should provide enough information to disposition this item.

3201-008-C-109. TERA's review indicates that the ESFAS diesel generator start signal does not override the 60-second coast down interlock. Bechtel stated that they are preparing a response and will provide a schedule for that response within ten days.

3201-008-C-110. This Confirmed Item noted apparent discrepancies in QPE-1, the load calculation for the diesel generator. It was noted that SCN-4082, which was discussed at the previous OCR meeting, contains a partial response to this Confirmed Item. This SCN has not yet been approved by CPC and Bechtel needs CPC input in order to complete an updated QPE-1 calculation. TERA provided meeting participants with a copy of Revision 1 of the attachment to C-110 (Exhibit 4). The revised attachment reflects the results of additional review by TERA of the apparent discrepancies between QPE-1 and the loads determined by

reviewing drawings. Bechtel will provide a schedule for a response to C-110. Revision I of C-110 will also be included in the next monthly status report.

3201-008-C-111. Bechtel stated that SCN-4162 has been issued in draft form to correct FSAR statements regarding the battery charger. The present FSAR statements appear to be inconsistent with each other. TERA will review this SCN in order to disposition C-111.

3201-008-C-132. Bechtel stated that the drawing has been updated to agree with the FSAR. TERA noted that the concern was more general than the specific issue raised by the Confirmed item. Bechtel stated that an IDCN was previously issued on the issue raised by TERA. Applicable IDCNs are now listed on drawings in order to provide a better cross-referencing system.

3201-008-C-134. Bechtel stated that the drawing referenced in this Confirmed Item has been revised. Unit 1 under voltage does not initiate Unit 2 LOP sequencer.

3201-008-C-135. This Confirmed Item is concerned with the diesel generator lockout of the 4.16 kv offsite power incoming breaker. The project position is that this design is not a safety concern and is not in violation of applicable IEEE standards. TERA stated that it will conduct a further review of this subject and determine the appropriate action to be taken.

3201-008-B-139. Bechtel stated that the LOP sequencer accuracy was measured during the EQ tests and shown to be ± 0.1 seconds. Bechtel also noted that the plant technical specifications allow a ± 10 percent accuracy in the start times. Since this item was an Observation, no further action is required.

3201-008-C-141. Bechtel forecasts a response in March for this item involving air quality requirements for the pneumatic control system.

3201-008-C-146. Bechtel expects to respond in March to this Confirmed Item concerning failure modes for the pneumatic control system. TERA noted that

the NRC had asked an FSAR question regarding safety-related air systems and that the response did not include this system. Bechtel will respond to this item in March.

3201-008-C-147. TERA noted that the diesel generator start time plus the ESFAS response time appears to be greater than the time indicated in the FSAR. CPC and Bechtel stated that the safety analyses are not significantly sensitive to the response time. Bechtel will provide additional information in March.

3201-008-C-153. The discussion at the meeting provided clarification that the demarcations on the panel drawings were not intended to indicate the steam generators. It was further noted that both the main panel and the auxiliary shutdown panel use the same convention regarding placement of the isolation valve controls. Thus, TERA's original concern that the numbering of the valves as shown on the P & ID and the panel drawing were not consistent is not correct. Based upon information received at the meeting, it can be concluded that the drawing is correct in its present form. TERA will resolve this item.

3201-008-C-144. This item resulted from TERA's independent analysis of a section of AFW piping. Because of the confirmatory nature of the calculations, TERA made its own assumptions regarding analytical alternatives which are not discussed in detail in the FSAR. Upon reviewing the actual calculations performed by Bechtel, it was determined that the assumptions made by TERA and by Bechtel were not consistent. It was also noted that conformance to Regulatory Guide 1.92 is an open item with respect to the NRC staff Safety Evaluation Report. Bechtel stated that they believe the design practices used for the Midland project contain sufficient additional conservatisms that consideration of the factors identified in the OCR are not necessary. Bechtel will advise TERA of an expected date for a response.

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 2B24	2VM-52B	CCW Rm Unit Cooler
Bus 2D24	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-54B	AFW Turbine Pp Rm Unit Cooler
Bus 2B56	2VM-121B	Aux Bldg Unit Cooler
Bus 2B90	OVM-109B	Aux Equip Rm Unit Cooler
Bus 2E80	-	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%.

ATTACHMENT 2
SUMMARY OF MEETING ON OUTSTANDING
CIVIL/STRUCTURAL ISSUES
MARCH 1, 1984
MIDLAND IDCV PROGRAM

A meeting was held on March 1, 1984, at Bechtel's Ann Arbor, Michigan, offices to obtain additional information related to outstanding Confirmed Items in the civil/structural review area. Exhibit 1 identifies the attendees of the meeting which included representatives of TERA, CPC, Bechtel, and NRC. Exhibit 2 presents the agenda used for the meeting.

Howard Levin, TERA, opened the meeting with a discussion of the purpose of the meeting which was to obtain Midland Project clarification of responses presented in a February 9, 1984, letter to TERA and initial responses to Confirmed Items previously unaddressed. The importance of responding to the specific issues at hand as well as the potential broader implications was stressed by TERA. The efficacy of using various "studies" that have been completed over the course of the project to assist in the evaluation of the significance of Confirmed Items was discussed. It was concluded that these efforts may provide benefit in addressing the cumulative effect of a group of items and in proceeding more directly to a conclusion addressing the overall quality of the project's civil/structural design efforts.

Rob Burg, Bechtel, made a brief presentation to show the general arrangement of site structures for the benefit of participants who were observing the meeting and/or attending discussions for the first time.

Responsible TERA personnel introduced each issue, noting Confirmed Items or sub-parts of Confirmed Items where the information provided by the Project was currently sufficient to support TERA review activities; thus not requiring additional project response. Most of the attention then focused on detailed discussions of the technical issues which remained outstanding. Exhibit 3 provides a summary of issues discussed and any actions agreed upon by TERA and Midland Project personnel.

ATTACHMENT 2, EXHIBIT 1

MIDLAND NUCLEAR PLANT - UNITS 1 AND 2

INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM.

REVIEW OF OPEN CIVIL ENGINEERING ITEMS

MARCH 1, 1984

<u>NAME</u>	<u>AFFILIATION</u>
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B.L. McCONNEL	Bechtel - Civil
M. ELGAALY	BECHTEL - CIVIL/STRUCTURAL
P.V. REGUPATHY	BECHTEL - CIVIL/STRUCTURAL
Bob Whitaker	CPCO - MPRAD
Hai-Boh Wang	NRC/IE/DRASIP
M.J. HOLLEY, Jr	CONSULTANT TO TERA
W. J. HALL	TERA CONSULTANT
JOE MARTORE	TERA
HOWARD LEVIN	TERA CORP
Doug Reeves	Bechtel Civil/Soils
MALAY DASGUPTA	Bechtel - " -
DALE HOARE	Bechtel / Civil-structural
Subhas K. Bose	Bechtel / Civil struct.

MIDLAND NUCLEAR PLANT - UNITS 1 AND 2

INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

REVIEW OF OPEN CIVIL ENGINEERING ITEMS

MARCH 1, 1984

<u>NAME</u>	<u>AFFILIATION</u>
ROB BURG	BECHTEL / LICENSING
P. SHUNMUGAVEL	BECHTEL
STEVE HARTSTERN	BECHTEL / CIVIL/SOILS
WILLIAM H. JOHNSON	BECHTEL / CIVIL STAFF
Lou Gibson	Consumers - Mgr. of Engr.
Thiru Thiruvengadam	Consumers - Civil Eng - Section Head.
Alma Varnay	Consumers - Civil Staff Engr.
Bruce Henley	Consumers - Civil
Chris MORTGAT	TERA
T.C. JOHNSON	BECHTEL
D F LEWIS	BECHTEL
FA Dougherty	TERA

ATTACHMENT 2, EXHIBIT 2

ATTACHMENT 2

MIDLAND INDEPENDENT DESIGN AND
CONSTRUCTION VERIFICATION PROGRAM

AGENDA FOR MARCH 1, 1984
CIVIL/STRUCTURAL REVIEW MEETING
BECHTEL OFFICES
ANN ARBOR, MICHIGAN

I. Estimated Time

Start: 1:00 PM
Adjournment: 5:30 PM

II. Introduction and Opening Remarks

III. Discussion of Confirmed Items

Items will be addressed individually and fully stated prior to proceeding. Any required clarification will be provided by TERA, followed by a presentation of pertinent information by the Midland project representatives. A group discussion will follow to provide clarification on the information presented, to status and to identify any necessary action on the part of TERA or the Midland project.

Items

C-015
C-069
C-071
C-077
C-079
C-099
C-101 through C-108
C-113 through C-117
C-119 through C-122
C-125
C-130
C-131

IV. Review of Future Plans and Commitments

V. Summary

ATTACHMENT 2, EXHIBIT 3
DISCUSSION OF OUTSTANDING
CIVIL/STRUCTURAL CONFIRMED ITEMS

3201-008-C-015 - This Confirmed Item questioned the bases used by the project for addressing the effects of floor flexibility on the seismic response of equipment and structure. TERA is currently reviewing information generated by SMA and no further information is desired at this time.

3201-008-C-069 - This Confirmed Item questioned issues associated with the seismic qualification of the AFW motor driven pump. TERA indicated that additional information was not required for items 1 and 4. Bechtel will transmit a calculation of weld stress, addressing item 2. They pointed out a section of the vendor's report which addressed item 3 and the load combinations used in the pump analysis.

3201-008-C-071 - This Confirmed Item identified certain apparent discrepancies associated with the referencing of computer files within calculation package DQ59.1. Bechtel indicated that file TIENORA corrected an error found in file TIENOBQ; however, file TIENOBQ was still used because the error was judged to be insignificant. TERA will review file TIENOBQ and disposition this item as appropriate.

3201-008-C-077 - This Confirmed Item questioned certain discrepancies identified in the FSAR. TERA indicated that further information was not required and that the item would be dispositioned shortly.

3201-008-C-099 - This Confirmed Item questioned apparant inconsistencies noted in the computation of modal displacements in the auxiliary building model. Bechtel will provide further clarification addressing the potential effect on interfacing commodities and the local floor response spectra. They will also address the equipment/piping located in the area noted in Item 2 as well as the input used in the analysis for evaluation of these components and commodities. Their preliminary evaluation indicates that displacement may be affected by approximately 3.5 percent.

3201-008-C-101 and C-125 - These Confirmed Items questioned whether or not compatibility evaluations between seismic and finite element models had been completed for the auxiliary building and diesel generator building, respectively. Bechtel indicated that in their 1982 vintage seismic/structural evaluations for the auxiliary building, they compared the N-S direction base shear for reasonableness against the average acceleration value and checked mode shapes in both horizontal directions. This year they further evaluated computed masses in the two models at various elevations and checked stresses under the building as represented by forces in the lumped springs and element outputs. Rotational stiffness was compared and agreement found to be within 20 to 30 percent. TERA indicated that these types of evaluations were extremely important and may provide a vehicle for making our integrated assessment of the impact of several issues noted in Confirmed Items. It was noted that numerous studies of this type are completed during the design process; however, not all are documented in a controlled fashion because they are not always considered integral to the necessary set of evaluations which are required as a minimum to document the design bases. However, TERA indicated a willingness to review draft or undocumented studies, if these would shed additional light on the consistency between the two models. Several areas for additional comparisons were discussed including addressing the magnitude of deflections and stiffness as well as the modes shapes. Bechtel committed to further consideration of the issue for both the auxiliary building and diesel generator building and will provide a forecast identifying planned actions and a schedule.

3201-008-C-102 - This Confirmed Item noted numerical inconsistencies between calculation SQ 148B-(Q) and values in the computer output. TERA indicated that further information for items 1, 2, 3 and 5 was not required. Bechtel indicated that item 6 was addressed on Page 40 of SQ 148G C-15(Q). Item 4 was previously noted and found to have an insignificant effect. TERA questioned the method of checking and the reply indicated that a a number-by-number check was the usual method and anticipated in this circumstance. TERA indicated that EDP 4.37 would be reviewed and evaluated as part of the disposition of this item and Confirmed Item C-085.

3201-008-C-103 - TERA indicated that Bechtel had supplied sufficient information clarifying the use of the noted equations and that further response was not required.

3201-008-C-104 - This Confirmed Item addressed inconsistencies and errors noted in the auxiliary building mass moment of inertia calculations. TERA indicated that further response to items 1, 2, 4, 5, and 7 was not required. Bechtel indicated in response to item 3, that the final configuration of the underpinning will be reflected in future calculations and that this item is on the remaining work schedule. They pointed out that building behavior was relatively insensitive to this boundary condition and they had completed approximately 26 parameter variations to support this conclusion. Bechtel has a summary record of these evaluations, but no detailed backup. They will transmit the summary sheets to TERA. Bechtel confirmed item 6, an omission of 25 percent live load for the EPA wings. This represents approximately 6 percent of the slab weight. They also confirmed item 8, an error in the center of gravity for equipment at elevation 659 feet in the auxiliary building. A detailed discussion by Bechtel followed to explain various conservatisms inherent in their peak broadening of spectra where they have utilized a +25 percent, -30 percent criteria. It was indicated that these criteria were arrived at by allowing a ± 50 percent variation for soil moduli, a ± 10 percent variation for Young's modulus and a ± 20 percent variation for mass; however, a degree of uncertainty was expressed as to the exact numerical values. Bechtel will provide clarification. Bechtel's position is that these conservatisms outweigh the impact of the noted errors.

3201-008-C-105 - This Confirmed Item questioned the implementation of the auxiliary building soil-structure interaction analysis. TERA requested that the users manual for CE 207 be transmitted to permit further review and evaluation of Bechtel responses to this item.

3201-008-C-106 - This Confirmed Item questioned certain inputs and assumptions on the auxiliary building soil-structure interaction analysis. TERA indicated that Bechtel's previous responses were being evaluated and that further information was not required at this time.

3201-008-C-107 - This Confirmed Item questioned aspects of the auxiliary building stick model assumptions regarding stick location. TERA indicated that they were evaluating item 1 internally. Bechtel acknowledged a decision to locate sticks in the EPA at coordinates other than those which were calculated for purposes of simplification. They discussed their position that the impact on overall response is insignificant.

3201-008-C-108 - This Confirmed Item questioned assumptions in the auxiliary building stick model. TERA indicated that sufficient information had been provided for items 4, 5, 9, and 10. In addressing items 1 and 2, Bechtel described their engineering judgement of the shear flow and force distribution in area of question, noting that the unconnected walls contribute 21 percent to shear stiffness. Bechtel will document in a discussion, the bases for their physical representation. For item 3, TERA questioned why two sticks were used and then combined from elevation 634' to 659'. Bechtel will respond. Bechtel also committed to respond to items 6, 7, and 8.

3201-008-C-113 - This Confirmed Item questioned certain apparent inconsistencies noted in load inputs to design calculations. TERA indicated that no further response or information was required.

3201-008-C-114 - This Confirmed Item addresses methods used to compute the moment and shear loads of slabs. TERA noted that C-114 will be reworded to clarify the original description of concern. Bechtel indicated that tension and shear were the predominant effect (at approximately 90 percent) and that out-of-plane bending accounted for the remainder. TERA indicated that further information was not required, since this methodology was only used for one-way slab design considerations.

3201-008-C-115 - This Confirmed Item questioned the methods of incorporating heavy equipment masses as reflected in calculations 66-6(Q) and 66-9(Q). Bechtel will provide the 95.0 series calcs and TERA will select specific packages for further evaluation.

3201-008-C-116 - This Confirmed Item sought clarification of load combinations used in the auxiliary building. TERA indicated that further information was not required.

3201-008-C-117 - This Confirmed Item questioned procedures for evaluating stresses in slabs and walls based on the results of the auxiliary building finite element analysis. Bechtel indicated that they will provide further response to items 1b, 2, and 3. They acknowledged that their method of averaging thermal gradients in slabs and walls was incorrect and that they are preparing a generic calculation that will address the impact considering a 60° F gradient, the maximum to which slabs and walls are subjected. Bechtel will describe their plans and submit a schedule for completing this evaluation.

3201-008-C-119 - This Confirmed Item questioned certain aspects of the seismic qualification of 6" gate valve and operator 2M03277AV and 2M03277A. TERA indicated that further information on items 1, 4, and 5, was not required. Bechtel will transmit a calculation addressing items 2 and 3.

3201-008-C-120 through C-122 - These Confirmed Items address various seismic equipment qualification issues. Bechtel indicated that they needed to coordinate a response with NUTECH and that they were unprepared at this time. They will provide either a response or plans and schedule for addressing these items.

3201-008-C-130 - This Confirmed Item sought clarification of referencing within calculation DQ-52.0(Q). Bechtel will provide clarification.

3201-008-C-131 - This Confirmed Item questioned the significance of certain calculated moments in the N-S wall footing strips of the diesel generator building. Bechtel indicated that they have revised calc DQ-52.0(Q) to quantitatively evaluate the effect and have determined that acceptance criteria can be met. They will transmit the revised calculation to TERA for review.

TERA

Warrick

April 4, 1984

PRINCIPAL STAFF			
✓ TERA	WAS	DRP	
✓ TERA		DE	
RC		DE/ST	
PAO		DE/VA	
EGA		SOSE	
EIF		IL	
		File	WAS

orig 3

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 Vice President
 Consumers Power Company
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 Jackson, Michigan 49201

Mr. J. G. Keppler
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Mr. D. G. Eisenhut
 Director, Division of Licensing
 Office of Nuclear Reactor Regulation
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Re: Docket Nos. 50-329 OM, OL and 50-330 OM, OL
 Midland Nuclear Plant - Units 1 and 2
 Independent Design and Construction Verification (IDCV) Program
 Meeting Summary

Gentlemen:

The eighth meeting on Confirmed Items and Findings was held on March 28, 1984. A summary is provided to document items discussed and actions agreed upon by the participants.

Sincerely,

Howard A. Levin

Howard A. Levin
 Project Manager
 Midland IDCV Program

cc: See Attached Sheet

Enclosure

~~8404060113~~

APR 6 1984

Mr. J. W. Cook
Mr. J. G. Keppler
Mr. D. G. Eisenhut

2

April 4, 1984

cc: Participants:
L. Gibson, CPC
R. J. Erhardt, CPC
D. Budzik, CPC
D. Quamme, CPC (site)
R. Whitaker, CPC (site)
D. Hood, NRC
J. Taylor, NRC, I&E
T. Ankrum, NRC, I&E
J. Milhoan, NRC, I&E
E. Poser, Bechtel
R. Burg, Bechtel
J. Agar, B&W
J. Karr, S&W (site)
IDCV Program Service List

HAL/djb



TERA CORPORATION

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AND CONSTRUCTION VERIFICATION PROGRAM

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**SUMMARY OF EIGHTH STATUS REVIEW MEETING
ON CONFIRMED ITEMS AND FINDINGS**

**March 28, 1984
Midland IDCVP Program**

A meeting was held on March 28, 1984 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in the February IDCVP Monthly Status Report dated March 16, 1984 and to status other outstanding items identified previously. Attachment 1 identifies the attendees of the meeting which included representatives of TERA, CPC, Bechtel, and NRC. Attachment 2 presents the agenda issued for the meeting in a notice dated March 20, 1984.

Howard Levin, TERA, opened the meeting with a discussion of the agenda. All items noted on the agenda were agreed upon for discussion by the participants; however, the order was modified to improve the flow of the meeting and to utilize resources effectively. While not specifically called out on the agenda, a discussion of the status of selected construction verification items was added. The meeting then proceeded with its primary objective which is to ensure that all participants have a complete understanding of the technical issues expressed as Confirmed Items and Findings in the February Monthly Status Report. The responsible TERA personnel described each item, followed by discussion by either CPC or Bechtel, who were requested to identify additional information that may have bearing on the issues or to provide clarification which would allow these issues to be dispositioned directly.

The status of previously outstanding Confirmed Items and Findings was also discussed, except for those noted in the meeting announcement. The meeting announcement listed certain OCRs as being on hold or that sufficient information is available for TERA to disposition the item. A summary of the significant aspects of the discussion is provided in Attachment 3 along with any course of action identified.

ATTACHMENT I

MIDLAND NUCLEAR PLANT - UNITS 1 AND 2
INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM
OCR STATUS REVIEW MEETING

March 28, 1984

<u>NAME</u>	<u>AFFILIATION</u>
Rob Burg	Bechtel/Licensing
Paul Milward	Bechtel/Site
F. A. Dougherty	TERA
H. Levin	TERA
G. E. Setka	TERA
C. Mortgat	TERA
H. Wang	NRC/IE/DQAISP
D. F. Lewis	Bechtel
R. E. Whitaker	CPCO/MPQAD
R. F. Schofer	Bechtel/Nuclear
G. Singh	Bechtel/Control Systems
L. Lampson	Bechtel/Nuclear
Dave Horvath	Bechtel/Mechanical
B. K. Shete	Bechtel/Mechanical
Mike Gerding	Bechtel/Control Systems
Lou Gibson	CPCo
A. Amin	Bechtel/Mechanical
Al Strunk	Bechtel/Mechanical
A. Rajn	Bechtel/Electrical
Dennis Kelly	Bechtel/Electrical
P. V. Regupathy	Bechtel/Civil
V. Vegma	Bechtel/Civil
A. Julua	Bechtel/Electrical
S. Rao	Bechtel/Civil Structural
P. C. Gupta	Bechtel/Plant Design
C. H. Perron	Bechtel/P.D. Staff
T. R. Thiruvengadam	CPCo

ATTACHMENT 2

MIDLAND INDEPENDENT DESIGN AND
CONSTRUCTION VERIFICATION PROGRAM

AGENDA FOR MARCH 28, 1984
OCR STATUS REVIEW MEETING
BECHTEL OFFICES
ANN ARBOR, MICHIGAN

I. Estimated Time

Start: 9:00 AM
Lunch: 12:00 PM to 12:45 PM
Adjournment: 3:00 PM

II. Discussion of Confirmed Items, Findings, Observations, and Resolved Items

<u>Item</u>	<u>TERA Lead</u>
A. Mechanical/Systems	
R-026*	Dougherty
Z-043*	Dougherty
C-112	Setka
R-129*	Witt
C-133	Setka
C-144	Witt
C-148,	Setka
B-158*	Dougherty
B. Electrical	
R-097*	Witt
C-109	Setka
C-110*	Setka
R-111*	Setka
R-132*	Setka
R-134*	Setka
C-135	Setka
C-141	Setka
C-146	Setka
C-147	Setka
R-153*	Dougherty
B-159*	Setka

ATTACHMENT 2
(continued)

<u>Item</u>	<u>TERA Lead</u>
C. Civil/Structural	
F-015*	Mortgat
R-071*	Mortgat
R-102*	Mortgat
R-103*	Mortgat
R-114*	Mortgat
R-116*	Mortgat
B-155*	Mortgat
C-156*	Mortgat
C-157*	Mortgat
III. Presentation of plans/schedule for response to issues discussed at the March 1, 1984, civil/structural review meeting.	Burg (Bechtel)
IV. Discussion of programmatic issues - as required.	
V. Discussion of Action Items and Logistics for Information Exchange	
Notes:	
1. Items are grouped to the degree practical to facilitate discussion and minimize manpower requirements during the entire meeting.	
2. Items that changed status during the February reporting period are denoted with an asterisk.	
3. The following OCRs have not reached a final disposition; however, further TERA or Midland Project actions have been identified during past public meetings. Accordingly, discussions are not contemplated by TERA unless the Midland Project has identified new information that is pertinent to the ongoing activities.	
C-005	F-050
C-022	F-052 thru -056
F-031	C-077
F-036	C-084
C-038	C-085
F-047	C-087 thru -089
C-048	F-091
F-049	C-092 thru -096

ATTACHMENT 3

SUMMARY OF DISCUSSION OF CONFIRMED ITEMS, FINDINGS, OBSERVATIONS, AND RESOLVED ITEMS

3201-008-F-047

Mr. Paul Milward, Bechtel, led a discussion which provided the project's response to this Finding which pertains to certain inconsistencies observed within the site storage and maintenance programs. He addressed specific TERA information requirements identified during the February 29, 1984 IDCVP Status Review Meeting and documented in a letter from Levin to Burg dated March 6, 1984.

- Valve 2LV-2975A1:

During the last meeting, TERA indicated concurrence that storage and maintenance activities for control valves would be relatively consistent regardless of the operator and concurrence with the proposed revision to the site storage instruction FI-197. The additional information requested pertains to clarifying references contained in Bechtel's January 8, 1984 response in a letter from Poser to Levin. There appeared to be a discrepancy between the referenced document (7220-J225B-54-6), which is an instruction manual for a CCI valve, whereas the installed valve is manufactured by Copes Vulcan. Mr. Milward indicated that the wrong document was referenced; however, the proper document contains the same requirements (i.e., the storage and maintenance program is the same for both the CCI and Copes Vulcan valves).

- Valve 2MO-3965A1:

In their January 8 letter, Bechtel indicated their position that the prime vendor, Anchor/Darling, misinterpreted Limitorque's lubrication instructions. TERA indicated at the February 29 meeting that

Bechtel's position appears inappropriate relative to instructions contained in Anchor/Darling's instruction manual, Vendor Document #7220-M117-142, page 19, paragraph 4.1, and that it appears these instructions relate specifically to the valve itself and are not related to the operator. Mr. Milward stated that certain instructions are confusing relative to when specific instructions apply (i.e., in-warehouse, in-place, or in-service). He indicated Bechtel's interpretation that the lube/stroking requirements for the valve and the operator lube requirements all apply once these components are placed in operation.

- Transmitter 2FT-3969A:

At the February 29 meeting, TERA indicated that taking credit for the functional capabilities of the transmitter is appropriate for a transmitter which is energized and properly sealed, i.e., a transmitter which is in operation. However, since TERA is addressing those activities necessary to maintain proper conditions for a transmitter which was in storage, it would appear that the vendor's recommended storage instructions should prevail unless a suitable alternative is identified. Mr. Milward indicated that while in storage, transmitters are placed in a "storage level A" humidity controlled environment where the humidity level is continually chart recorded. Therefore, individual component control through humidity indicators or desiccants is not necessary. Once transported to the general in-plant area, the transmitters are placed in a local "tented" environment which has dehumidifiers. The areas are monitored once a week. Mr. Milward indicated that he had reviewed data applicable back until March, 1981 and found the relative humidity to average approximately 45%.

- Air Handling Unit 2VM-54A:

Bechtel's January 8 response indicated that the TRANE Company was responsible for the meggering requirement prior to release from

storage. TERA's investigation revealed that the meggering requirement was derived from Bechtel's storage instruction in effect at the time the fan motor was released to construction--F-314, Rev. 1. At the February 29 meeting, TERA requested information which would serve to reconcile the apparent discrepancy and those procedures, instructions, etc. used to accomplish the transfer of maintenance responsibility from Bechtel To Zack.

Mr. Milward indicated that motors (such as these) of less than 50 hp were to be meggered at turnover; however, most motors have been subjected to this requirement. TERA found 1 of 2 which were not. Bechtel supplied equipment becomes the responsibility of the subcontractor (Zack) when released for installation. The material withdraw request (MWR) is the means of notification. Zack is then responsible for maintenance in accordance with their own procedures.

Mr. Lou Gibson, CPC, indicated that the project would document their completed response to this Finding in a transmittal to TERA.

3201-008-F-052

Bechtel indicated that a response was not complete. A schedule will be provided along with the 10-day response to issues discussed at this meeting.

3201-008-F-049, -050, -055, -056

Levin indicated TERA was awaiting information on these Findings. The project concurred, and it was agreed that the status remains unchanged.

3201-008-F-053, -054

Levin indicated that resolution of these Findings was on hold pending commencement of TERA's ICVP activities.

3201-008-C-092, -094 thru -096

Levin indicated that TERA has sufficient information to disposition these Confirmed Items.

3201-008-C-091, -093

These items were not discussed; however, they remain outstanding.

3201-008-R-026

TERA explained the basis for resolving C-026. There was no further discussion of this item.

3201-008-Z-043

This is a Finding Resolution Report, which was concerned with credit being taken for non-seismic pipe and a check valve following a seismic event. TERA discussed the basis for this Finding Resolution Report. There was no further discussion.

3201-008-R-129

The basis for resolution of this item was presented by TERA. There was no further discussion.

3201-008-C-112

TERA stated that it received the March 22 submittal by Bechtel which provides a revised calculation for the diesel generator exhaust back pressure. TERA is presently reviewing the revised calculation.

3201-008-C-133

This Confirmed Item involves the operability requirements for the pneumatic control system. The initial response by the project, dated February 24, provided an April 16 date for responding to this item. At the February 29 OCR meeting, it was noted that TDI has leak rate information which may be of value in resolving this item. Furthermore, it was noted that this item is being reviewed as part of the design and quality review of TDI being performed by CPC. At the March 28 meeting it was agreed that Bechtel will send TERA the available TDI leak rate data which they have. It was noted that this data actually applies to the SMUD diesel; thus, care must be exercised in using this information. Bechtel also has developed a calculation which may in part resolve this item. The calculation is in its final review process and should be complete within the next two weeks.

3201-008-C-144

This item is concerned with the assumptions used in piping stress analysis and subsequent calculation of support loads. The OCR identified differences between the analysis method used by Bechtel and the criteria which the IDVP considers appropriate. Bechtel stated that, although the analysis methods differ between those used on the project and by the IDVP, sufficient margin exists that the current design is adequate. Bechtel is initiating a study to demonstrate the adequacy of the current margins. It is estimated that the study will be complete in approximately six weeks. TERA requested that Bechtel provide a copy of the program plan document, memorandum, or other similar information which outlines the scope and approach being used for the study. In response to a question by TERA, Bechtel stated that they may or may not use the SMA study in developing their response to C-144.

3201-008-C-149

This Confirmed Item is concerned with the compliance of the plant with NFPA-12, which requires de-energizing equipment, such as the fuel oil transfer pumps, in the event of a fire. Further information on this Confirmed Item will be provided to TERA before the next OCR meeting.

3201-008-C-150

Bechtel stated that a SAR change will be prepared within the next two weeks to clarify the project position on implementation of NFPA requirements.

3201-008-C-148

Bechtel explained the relationship between electrical drawings and architectural drawings showing building penetrations and fire seals. The architectural drawings show the as-built condition and are updated periodically. The latest revisions of the drawings which are concerned with the penetrations discussed in this OCR are dated November 8, 1983. TERA will determine whether copies of those drawings have been received.

3201-008-R-097

TERA described the basis for resolving this OCR. There was no further discussion.

3201-008-C-109

Bechtel has provided a response concerning the fuel lock-out, which TERA is reviewing. TERA stated that no further information is needed at this time.

3201-008-C-110

Bechtel will provide a formal response to this Confirmed Item concerning Rev. 1 of the load tabulation within two weeks. Bechtel stated that they will provide an advance copy following the meeting.

3201-008-R-111

This item was resolved based on the receipt of a SAR change notice. There were no questions concerning this resolution.

3201-008-R-132

TERA noted that the documentation concerning the undervoltage set points has been updated and made consistent with the FSAR. No further discussion was held concerning this Resolved Item.

3201-008-R-134

TERA presented the basis for resolving this Confirmed Item regarding the LOP sequencer. No questions were raised concerning this resolution.

3201-008-C-135

Bechtel has provided a response concerning the conformance of interlocks to IEEE-308. TERA will determine the appropriate action to take.

3201-008-C-141

This Confirmed Item is concerned with the air quality requirements for the air supplied to the air receiver. Bechtel stated that the specification for the diesel generator is functional, and thus it is up to the vendor to determine air quality requirements. TERA noted that the specification was modified to account for the air system after the diesel was procured. Bechtel maintains that the performance of the air supply is within TDI's responsibility, and that the vendor has provided filters and dryers for the air system. Bechtel further stated that they have reviewed the system provided by TDI. TERA will review vendor information on system performance.

3201-008-C-146

Bechtel stated that the redundancy in the diesel generator systems provides assurance of the acceptability of postulated failures. They further stated that common mode failure is not a design basis for the plant, and that factors such as maintaining air quality minimize the potential for such failures. TERA questioned whether the FSAR is in error, in that the diesel generator and pneumatic

control system were not included in the list of pneumatic systems which the project provided to the NRC in response to a question. TERA further asked whether a failure modes and effects analysis should be provided in the event that it is determined that the pneumatic control system should have been listed in response to the NRC question. Bechtel will investigate whether it would be appropriate to include the diesel pneumatic control system in the list of pneumatic systems, and consequently whether a failure modes and effects analysis should be provided.

3201-008-C-147

This Confirmed Item noted that the ½ second response time of the ESFAS system was not included in accident response times. Bechtel stated that the B&W BOP criteria documents call for the diesel generator to start within ten seconds of the engine's receipt of the start signal. The B&W criteria also call for allowances to be made for response times. Bechtel stated they were aware of this situation and had reviewed it previously. Bechtel further stated that a SAR change notice would be needed.

3201-008-R-153

This item was fully discussed at the Confirmed Item stage at the previous OCR meeting. During that meeting, Consumers Power Company explained that the demarcations on the J-909 drawing did not represent the steam generators, as TERA had assumed. With this explanation, TERA was able to classify this OCR as resolved.

3201-008-C-156

TERA described how it calculated loads on the embedded channel, which resulted in this Confirmed Item stating that the calculated loads appear to exceed the allowable. Bechtel stated that a response is scheduled for April 13.

Calculation SQ-148-K(Q) was issued in response to a previous OCR. TERA's review indicated that this calculation contained an error. TERA stated during the meeting that the error is considered to be minor. However, this calculation calls into question the checking process used on the project. Bechtel stated that they would respond by April 13 with a description of the checking process.

Other Civil/Structural Items

Bechtel reviewed their expected response dates for all outstanding civil/structural and civil/soils OCRs. During this discussion, it was noted that TERA will provide a clarification of item number 8 of OCR 3201-008-C-104. The following table presents the scheduled response dates for civil/structural and civil/soils OCRs.

SCHEDULE FOR CIVIL OCRs

	<u>OCR #</u>	<u>Scheduled Response</u>
Civil/Structural	069	4/20
	099 (items 1,2)	4/20
	104 (3,6)	4/20
	104 (8)	later
	107 (2)	4/20
	108 (1, 2, 6, 7, 8)	4/20
	117 (1B)	4/6
	119 (2, 3)	4/20
Civil/Soils	117 (2, 3)	4/13
	117 (4)	5/2
	101	4/26
	130/131	4/26
	125	5/2

TERA has converted Confirmed Item C-015 into a Finding. This issue deals with the consideration of floor flexibility in the seismic analysis. TERA explained its basis for making this a Finding. Consumers Power Company stated that they had discussed this issue with the NRC previously and had clearly stated that floor flexibility was not considered a design basis for the plant. TERA indicated that while the project's commitments represent an important yardstick for measuring implementation of the design, an evaluation of the adequacy and completeness of criteria is part of the IDVP review. In TERA's view, this phenomena can potentially have a significant effect on the performance of certain components during an earthquake. Therefore, a determination should be made as to the safety significance of this issue to the Midland plant. TERA indicated that a basis was not provided in a Bechtel study referenced in the Finding, and that an SMA study establishes that floor flexibility can lead to significant additional amplification of response. CPC pointed out that SMA essentially has completed a current day "SRP" seismic analysis that considers the flexibility of floors and the impact on response and equipment qualification. It was concluded by CPC and TERA that the SMA study may provide additional information that would be useful in qualifying the significance of this Finding. A future meeting will be held to review the SMA seismic margins analysis and its applicability.

TERA

February 28, 1984

Mr. James W. Cook
Vice President
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1945 West Parnall Road
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Mr. J. G. Keppler
Administrator, Region III
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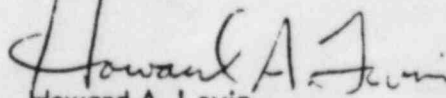
Mr. D. G. Eisenhut
Director, Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket Nos. 50-329 OM, OL and 50-330 OM, OL
Midland Nuclear Plant - Units 1 and 2
Independent Design and Construction Verification (IDCV) Program
Meeting Summary

Dear Sirs:

The sixth meeting on Confirmed Items and Findings was held on February 1, 1984. A summary is provided to document items discussed and actions agreed upon by the participants.

Sincerely,


Howard A. Levin
Project Manager
Midland IDCV Program

cc: See Attached Sheet

Enclosure

HAL/sl

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✓ PA	QCS	DPRP	
D/RA		DE	
D/R		DRMSP	
PC		DRMA	
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GA		ML	
EIF		FI	✓

MAR 5 1984

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Mr. J. W. Cook
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2

February 28, 1984

cc: Participants:
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D. Quammy, CPC (site)
R. Whitaker, CPC (site)
D. Hood, NRC
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IDCV Program Service List



TEPA CORPORATION

SERVICE LIST FOR MIDLAND INDEPENDENT DESIGN
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SUMMARY OF SIXTH MEETING ON CONFIRMED ITEMS AND FINDINGS

February 1, 1984
Midland IDCVP Program

A meeting was held on February 1, 1984 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to confirmed items identified in the IDCVP monthly status report dated January 13, 1984 and to status other outstanding items identified previously. Attachment 1 identifies the attendees of the meeting which included representatives of TERA, CPC, Bechtel, and NRC. Attachment 2 presents the agenda used for the meeting.

Howard Levin, TERA, opened the meeting with a discussion of the agenda and a summary of the purpose of the meeting. A brief discussion of the 10-day response time was held. It was agreed that Bechtel would use overnight delivery services such as Federal Express to expedite the receipt of information by TERA. TERA acknowledged the receipt of project responses to previous OCRs and stated that those responses were being evaluated. The meeting then proceeded with its primary objective which is to ensure that all participants have a complete understanding of the technical issues expressed as confirmed items. Each new confirmed item contained in the Status Report dated January 13 was discussed. This is intended to enable Midland Project personnel to identify additional information that may have bearing on the issues. Clarification or presentation of additional information by Midland Project personnel is also sought so that specific issues may be further dispositioned directly.

The status of previously outstanding confirmed items and findings was also discussed except for those noted in the meeting announcement. The meeting announcement listed certain OCRs as being on hold or that sufficient information is available for TERA to disposition the item. A summary of the significant aspects of the discussion is provided in Attachment 3 along with any course of action identified. The responsible TERA personnel described each item, followed by discussion by either CPC or Bechtel personnel as appropriate. The order in which the OCRs were discussed was revised at the start of the discussion period to achieve maximum efficiency in the use of the available time.

ATTACHMENT I

IDCV PROGRAM
SIXTH OCR STATUS REVIEW MEETING
FEBRUARY 1, 1984
BECHTEL OFFICE - ANN ARBOR

R. Burg	Bechtel	S. Schofer	Bechtel
D. Horvath	Bechtel	A. Amin	Bechtel
L. Gibson	CPCo	V. Kumar	Bechtel
H. Wang	NRC	D. VanWagener	Bechtel
J. Setka	TERA	G. Singh	Bechtel
G. Peimers	TERA	P. Rinnal	Bechtel
C. Mortgat	TERA	W. Chevapravatdumrong	Bechtel
F. Dougherty	TERA	D. Reeves	Bechtel
H. Levin	TERA	J. Ross	Bechtel
D. Tulodieski	TERA	S. Hartstern	Bechtel
G. Eagle	CPCo	M. Voutyras	CPCo
R. Whitaker	CPCo	P. Regupathy	Bechtel
A. Julka	Bechtel	S. Rao	Bechtel
B. Shete	Bechtel	D. Nims	Bechtel

ATTACHMENT 2
 AGENDA FOR FEBRUARY 1, 1984 IDCVP MEETING
 BECHTEL OFFICES
 ANN ARBOR, MICHIGAN

- I. Start - 9:00 AM
- Lunch - 12:00 PM to 12:45 PM
- II. Discussion of Confirmed Items, Findings, Observations, and Resolved Items

<u>Item</u>	<u>TERA Lead</u>
A. Construction	
o F-047	Tulodieski
o F-049	"
o F-050	"
o F-054	"
o F-055	"
o F-056	"
o F-091	"
o C-092	"
o C-093	"
o C-094	"
o C-095	"
o C-096	"
B. Mechanical/Systems	
o F-043	Dougherty
o R-075*, R-076*	Witt
o B-126 thru B-128*	"
o C-129*	"
o C-085	"
o C-112	Setka
o C-133*	"
C. Electrical	
o C-097	Dougherty
o C-109	Setka
o C-110	"
o C-111	"
o C-132*	"
o C-134*	"
o C-135*	"
o B-136 thru B-138*	"

<u>Item</u>	<u>TERA Lead</u>
D. Structural	
o C-125*	Mortgat
o C-130*	"
o C-131*	"
o C-099, C-101 thru C-108 (4)	Dougherty
o C-071, C-113 thru C-117 (4)	Dougherty
o C-119 thru C-122 (4)	Dougherty

III. Discussion of programmatic issues (if necessary)

IV. Discussion of Action Items and Logistics for Information Exchange

V. Adjournment - 3:00 PM Estimated

Notes: 1. Items are grouped to the degree practical to facilitate discussion and minimize manpower requirements during the entire meeting.

2. Items that changed status during the December reporting period are denoted with an asterisk.

3. The following OCRs have not reached a final disposition; however, further TERA or Midland Project actions have been identified during past public meetings. Accordingly, discussions are not contemplated by TERA unless the Midland Project has identified new information that is pertinent to the ongoing activities.

- | | |
|---------|---------|
| o C-005 | o C-015 |
| o C-022 | o C-025 |
| o C-026 | o F-031 |
| o F-036 | o C-038 |
| o C-039 | o C-040 |
| o C-048 | o F-052 |
| o F-053 | o C-068 |
| o C-069 | o C-074 |
| o C-077 | o C-081 |
| o C-084 | o C-087 |
| o C-088 | o C-089 |

4. Discussion will be limited to a response by the Midland project addressing plans, schedule and status of their activities.

ATTACHMENT 3

DISCUSSION OF CONFIRMED ITEMS, FINDINGS, OBSERVATIONS, AND RESOLVED ITEMS

3201-008-C-109. This OCR is concerned with the 60-second coast down interlock. TERA stated that it had received no new information concerning this item since the last meeting. Bechtel stated that they were already aware of this concern based upon the receipt of an I&E Notice. Bechtel has provided information for TERA in a letter dated January 25. TERA stated that it will review this letter.

3201-008-C-110. This confirmed item resulted from apparent discrepancies noted by TERA between the QPE-1 load tabulation and a similar tabulation prepared by TERA. Bechtel stated that SCN-4082 is currently in preparation and is being reviewed by CPC. TERA stated that it had reviewed a draft of SCN-4082 and that it appears to be at least in part responsible to the concern. Receipt of this SCN is required before TERA can determine appropriate action to be taken on this OCR.

3201-008-C-111. Bechtel stated that SAR change notice 4082 also addresses the inconsistency noted in this OCR concerning battery charger capabilities.

3201-008-C-132. Bechtel stated that a January revision to the drawing referenced in C-132 should resolve this OCR. It was stated that the FSAR describes the actual system basis and that the drawings were lagging behind the FSAR. It was also noted that CPC determines relay set points and advises Bechtel, and then Bechtel revises the drawings. TERA will advise CPC if additional information is necessary to disposition C-132.

3201-008-C-134. The LOP sequencer logic contained a Unit 1 under-voltage initiation of Unit 2 standby electric power. Bechtel stated that this is no longer considered necessary and that a revision was in process to update the documentation. It was noted that this item is an interface between the control systems and electrical groups. TERA requested additional information concerning the

process by which a previous revision resulted in the addition of this initiation. The addition of this logic was a fairly recent revision to the drawing; therefore, the revision currently in process simply restores the design to its previous basis. TERA requested information on why the logic was changed previously.

3201-008-C-135. The project stated that this item had been noted within the project in August when it was determined that no action need be taken until after fuel load. It is considered by the project that the diesel generator lockout relay can be manually reset allowing closing of the normal incoming breaker. It is the project's position that the system functions properly as presently designed and there is no need to revise the design at this time. The need for a revision is only a matter of convenience rather than a functional requirement. Bechtel has provided documentation of the project position in a letter to TERA dated January 8, 1984. TERA will review this information and determine the disposition of this OCR.

3201-008-F-047. This finding is concerned with storage and maintenance practices at the Midland site. TERA has received various documents concerning this issue including a copy of the Task Force proposal for reorganization of the storage and maintenance program. TERA has also had discussions with project personnel to obtain further information concerning this item. The specific concerns listed in F-047 have not yet been addressed. It was expected that a formal response would have been received by the meeting date. TERA is awaiting receipt of an approved version of the storage and maintenance procedure FPG5.000. With this information and the response to the specific items in F-047, TERA should be able to disposition this finding.

3201-008-F-049. This finding is concerned with separation criteria, in particular for air-lined cables. TERA has been advised that air-lined cables will be bundled and wrapped and that the program for cable separation verification has not been finalized. TERA requested copies of documentation which states that construction will bundle and wrap air-lined cable. TERA will retain this item as a finding pending review of the inspection plan to be implemented to verify cable separation.

3201-008-C-112. This OCR is concerned with the calculation of diesel generator exhaust back pressure. The OCR noted that the original calculation performed by Bechtel showed a back pressure slightly in excess of the 10 inches allowed by the vendor. Bechtel stated that the calculation has been revised to reflect newer information. TERA will review the revised calculation and will meet with Bechtel to walk through the calculation per the calculation release procedure so that the calculation may be released upon its approval, which is expected within the next two weeks.

3201-008-C-113. The air start system supplies air for the pneumatic control system for the diesel generator. TERA needs additional information to verify that adequate air is available to operate the pneumatic control system after the diesel starts assuming that the non-category I air compressors do not supply additional air to the starting air receivers. Bechtel stated that the starting air receivers are sized for control system use and that it was in the vendor's scope to properly size the accumulators. Bechtel will determine what additional information is available on the subject.

3201-008-F-050. This finding concerns potential misrouting of cable and is being retained as an unresolved finding pending CPC's final disposition of NCR-A-5000-6-CV. The disposition of this NCR will provide final program interpretation of the cable routing criteria.

3201-008-F-054. A Bechtel letter dated January 19, 1984 provides additional information concerning this finding. TERA stated that an issue remains based upon the CPC response which transcends the specific noted inconsistency. The concern is how temporary attachment records are used; specifically, CPC response would indicate that the temporary attachment record is completed upon satisfactory removal of the attachment lugs or is an after-the-fact record. TERA's concern is that normal industry practice uses the temporary attachment record as a controlling document, that is, a before-the-fact record. This way the record becomes an open item that must be closed before an installation can be completed.

3201-008-C-097. This confirmed item is concerned with the capability to re-establish outside air to the control room following isolation of the control room HVAC system and given a single failure. Bechtel stated that a hand wheel is available to allow manual operation of the valve. It was further stated that the access study performed as a result of TMI shows that access can be gained to the hand wheels.

3201-008-C-129. This confirmed item is concerned with the specified closing time for dampers. Bechtel stated that the 1-second closing time applies to dampers downstream of the ones TERA was reviewing. Therefore, the system must be capable of detecting hazardous material within 4 seconds and closing valves within 1 second giving a total 5-second time. The 5-second value should be used for further reviews.

Bechtel also discussed the apparent discrepancies between the so-called Appendix A and Appendix D gases. The hazardous gas monitoring system design objective was to reach a lower limit than specified in the FSAR. Appendix A (Note 1) is the actual response to design criteria. The 5-second and 16-second values specified for hydrogen bromide and bromine meet the FSAR criteria even though they are different from the general 4-second detection time used for other materials. The actual response of the system is such that concentrations in the control room are within acceptable limits.

TERA had noted on page 10, paragraph 6.1.2(b) of the specification that a reference to Appendix A is made and commented that it appears the reference should be to Appendix D. Bechtel stated that the reference to Appendix A is correct in that the paragraph is referring to the extended specific mode and that no gases are currently in this group. Appendix D refers to newly identified gases which are currently being tested. When the testing is complete they will be included in Appendix A. TERA had also noted that the specification for the hazardous gas monitoring system is based upon a 2-second isolation time for the dampers. This seemed to be in conflict with a 3-second isolation time in a damper specification. Bechtel stated that the 3-second closing time applied to other dampers and that the dampers in question actually have a 1-second closure

time. The 2-second value was supplied to the hazardous monitoring system vendor as a degree of conservatism since the longer it takes to close the dampers the more sensitive the monitoring system must be in order to meet the FSAR commitments regarding concentrations in the control room. Therefore, it can be concluded that the system is correctly designed and that the apparent discrepancies are in fact conservative margins being applied to the various vendors. TERA will review available information and request additional information from Bechtel in order to disposition this item.

3201-008-F-055. TERA has obtained information concerning this item from CPC personnel. TERA is awaiting the receipt of Bechtel/CPC formal response to the finding and then will determine the appropriate course of action.

3201-008-F-056. No response has been received to date on this item.

3201-008-F-091. This OCR is concerned with the lesson plan for PQCI covering hanger inspections. TERA noted that a CPC memo of 9/29/83 indicates that due to word processing errors activity 34 was omitted from the lesson plan, but that the PQCI was covered in its entirety during the lesson. TERA will disposition this item pending receipt of lesson plan revisions in effect prior and subsequent to the lesson plan reviewed by ICV personnel.

3201-008-C-092. This confirmed item was concerned with a possible bias in the method of assigning hangers to be used for qualification of inspectors. The current program requires Level III personnel to assign hangers, although previously the qualifying QCE was selecting his own hanger. TERA is awaiting the receipt of additional information in order to disposition this item.

3201-008-C-093. CPC is preparing a response to this confirmed item. TERA will evaluate the response and disposition the confirmed item accordingly.

3201-008-C-094. This confirmed item resulted from physical verification of the control room HVAC system. Four inconsistencies were noted in the physical verification activity. Of these, CPC noted that TERA's first item was due to the hangers being destatused during the time the ICV reviewers were conducting the

review in order to enable removal of a test coupon for destructive testing. The entire section will eventually be removed. TERA will resolve this item and a re-inspection will be conducted later. CPC stated that item 2 was checked by CPC and found to be acceptable. TERA will review and evaluate the CPC response. With regard to items 3 and 4 of this OCR, CPC stated that per the convention used on the project, the flange connections which TERA inspected are not considered part of the completed duct section, but rather are within the inspection boundaries of the incomplete dampers. TERA will disposition these two items.

3201-008-C-095. Information presented to TERA indicates that a means is available to indirectly verify the welders' qualification to a specific WPS. Recent revisions to documenting procedures require the recording of the date that a weld was actually formed, thus removing this item from future concern. CPC agreed to provide a formal response that TERA personnel can review in order to disposition the OCR.

3201-008-C-096. TERA is awaiting the receipt of CPC response to inconsistencies noted with regard to certain ducts and hangers associated with the HVAC system.

3201-008-C-125. This item has been divided into two sub-items. Bechtel civil soils is doing a short study to determine the compatibility between stick and finite element models.

3201-008-C-130. This OCR was concerned with the source of the seismic force values used in calculation DQ52.0(q). Bechtel advised that Attachment C to the calculation contains these values. TERA will determine whether Attachment C is available and, if not, will make a request for this information.

3201-008-C-131. Bechtel has updated its calculations with information on why the model overstates the moments in the north-south wall footing strips. TERA will review the revision of Bechtel's calculations.

3201-008-C-99, C-101-C-108, C-071, C-113-C-117, and C-119-C-122. The general status of these civil structural items was discussed. CPC and Bechtel are preparing additional information for TERA's review. It is expected that this information will be transmitted to TERA approximately February 8 in order that the information be reviewed prior to the next OCR meeting. TERA recommended that a separate OCR meeting be held on civil structural items. It was agreed that consideration will be given to a two-day meeting so that more detailed discussions can be held concerning the responses being prepared to the OCR.

TERA

December 16, 1983

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Re: Docket Nos. 50-329 OM, OL and 50-330 OM, OL
Midland Nuclear Plant - Units 1 and 2
Independent Design and Construction Verification (IDCV) Program
Meeting Summary

Dear Sirs:

The fourth meeting on Confirmed Items and Findings was held on November 30, 1983. A summary is provided to document items discussed and actions agreed upon by the participants.

Sincerely,



Howard A. Levin
Project Manager
Midland IDCV Program

cc: See Attached Sheet

Enclosure

HAL/jb

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A/RA		DRMSP
✓ RC	fac	DRMA
PAO		SCS ✓
SGA		ML
ENF		File <i>fac</i>

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Mr. J. W. Cook
Mr. J. G. Keppler
Mr. D. G. Eisenhut

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December 16, 1983

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R. Whitaker, CPC (site)
D. Hood, NRC
J. Taylor, NRC, I&E
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F. Levandoski, B&W
IDCV Program Service List

HAL/jb



TERA CORPORATION

SERVICE LIST FOR MIDLAND INDEPENDENT DESIGN
AND CONSTRUCTION VERIFICATION PROGRAM

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SUMMARY OF FOURTH MEETING ON CONFIRMED ITEMS AND FINDINGS
NOVEMBER 30, 1983
MIDLAND IDCVP PROGRAM

A meeting was held on November 30, 1983 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in the sixth IDCVP Monthly Status Report dated November 15, 1983, and to status other outstanding items identified previously. Attachment 1 identifies the attendees of the meeting which included representatives from TERA, CPC, Bechtel, and NRC. Attachment 2 presents the agenda used for the meeting.

Howard Levin, TERA, opened the meeting with a discussion of the agenda and a summary of the purpose of the meeting. The minimum objective for the meeting was to ensure that all participants gained a complete understanding of the technical issues expressed as Confirmed Items. This is intended to enable Midland project personnel to identify additional information that may have a bearing on the issues at hand. Direct clarification or presentation of additional information by Midland project personnel is also sought so that specific issues may be further dispositioned directly.

The status of outstanding Confirmed Items and Findings was also discussed, including a cursory review of Observations and Resolved Items. A summary of significant aspects of these discussions is provided in Attachment 3 along with any course of action identified. The responsible lead TERA personnel described each item followed by a discussion of either CPC or Bechtel personnel, as appropriate.

The final discussions by the three parties, TERA, CPC, and NRC, focused on programmatic issues. CPC indicates that several constraints had compounded which may make a mid-course correction of the IDCVP desirable. These constraints include the completion status of Midland project, recognition of a schedule delay by CPC, as well as CPC financial considerations. All parties agreed that it was reasonable for the IDCVP to respond to a changed environment. Future discussion in this regard is contemplated.

TERA representatives indicated that alternatives are currently being addressed that will allow the IDCVP to meet defined objectives in a cost and schedule effective manner. To date, the Midland project completion status has impacted the IDCVP, principally in the construction verification area. Most activities in the construction area are on hold indefinitely. The design verification effort is proceeding at approximately an 80-90% pace with the exceptions being in review areas that are affected by Midland design activities which are in progress or revision. An option under consideration is to review the engineering programs that are in place for this 10-20%; thus, enabling completion of the design review.

TERA - IDCVP
 FOURTH OCR STATUS REVIEW MEETING
 NOVEMBER 30, 1983

<u>NAME</u>	<u>AFFILIATION</u>
ROB BURG	BECHTEL / NUCLEAR
HOWARD LEVIN	TERA CORP.
FRANK DOUGHERTY	TERA CORP.
DON TULODIESKI	TERA CORP.
DOUG WITT	TERA CORP.
LIONEL BATES	TERA CORP.
LOW GIBSON	CPCO
CHRIS MORTGAT	TERA CORP.
TED HARRISON	TERA CORP.
R E WHITAKER	CPCO IMPACT

AGENDA FOR NOVEMBER 30, 1983 IDCVP MEETING
BECHTEL OFFICES
ANN ARBOR, MICHIGAN

I. Estimated Time

- 9:00 a.m. - Start
12:00 p.m. - 12:45 p.m. - Lunch
3:00 p.m. - Adjournment

II. Discussion of Confirmed Items, Findings, Observations, and Resolved Items

<u>Item</u>	<u>TERA Lead</u>
A. Construction	
● F-049*, F-050*	Tulodieski
● C-091*, C-092*	Tulodieski
● Z-045*, Z-046*, F-047	Tulodieski
● C-055*	Tulodieski
● C-056*	Tulodieski
● C-052, C-053, C-054	Tulodieski
● F-036	Tulodieski
● F-031	Tulodieski
B. Mechanical/Systems	
● C-026*	Dougherty
● C-081*	Dougherty
● F-018*, Z-018*	Dougherty
● R-020*, R-027*, C-005	Dougherty
● C-087*, C-088*, C-089*	Dougherty
● C-038	Dougherty
● C-025	Dougherty
● C-043	Dougherty
● C-048	Dougherty
● B-080*, B-086*, B-090* (only if the project has questions)	Dougherty
● C-084*	Witt
● R-073*	Witt
● C-066, C-074, C-075, C-076	Witt
C. Electrical	
● C-039	Bates
● C-040	Bates
● C-022	Bates

<u>Item</u>	<u>TERA Lead</u>
D. Structural	
o C-015	Mortgat
o C-068	Mortgat
o C-077	Mortgat

III. Discussion of programmatic issues (if necessary)

IV. Discussion of Action Items and Logistics for Information Exchange

V. Adjournment

- Notes:
1. Items are grouped to the degree practical to facilitate discussion and minimize manpower requirements during the entire meeting.
 2. Items that changed status during the October reporting period are denoted with an asterisk.

ATTACHMENT 3

DISCUSSION OF CONFIRMED ITEMS, FINDINGS, OBSERVATIONS, AND RESOLVED ITEMS

3201-008-F-049

This item is concerned with cable separation. CPC indicated that they recognize this finding as a valid issue, which will be addressed. Bechtel is looking into wrapping of the air line cables. The project's response to this finding will be submitted to TERA for future review.

3201-008-F-050

MPQAD has written a nonconformance report (NCR) on this item. The Midland project uses NCRs to document open items for which final resolution is requested. This does not mean that MPQAD agrees that there is an error; but rather that some clarification is needed. TERA will contact MPQAD for further discussion of this concern, which involves a cable routed vertically through an unscheduled horizontal cable tray.

3201-008-C-091

This confirmed item noted that a lesson plan used for training of personnel for reinspection of piping supports omitted activity 3.4, which involves snubber assemblies. TERA was advised that the lesson plan had been revised and that the project was checking how many snubber inspections had been performed by personnel trained prior to the revision of the lesson plan. TERA will review the revised lesson plan and will evaluate further action needed to disposition this confirmed item.

3201-008-C-092

This confirmed item relates to the method of qualifying inspectors. CPC noted that both the NRC and Stone & Webster had reviewed the qualification procedure and found it acceptable. TERA's confirmed item noted the possibility of the introduction of bias into the testing method, CPC believes that the current procedure is adequate; however, they will provide a response to this confirmed item.

3201-008-Z-045, -046

These two findings have been resolved based upon the issuance of revised maintenance procedures and a nonconformance report. Furthermore, the pump and turbine will be disassembled and inspected in the presence of factory representatives to determine the condition of equipment. TERA will be present to witness the inspection to verify the condition of the pump and turbine.

3201-008-F-047

F-047 is the generic concern about the process by which vendor-recommended storage and maintenance requirements are reflected in project procedures. TERA is currently waiting for the final release of project documents which address this concern. When these documents become available, TERA will review them in order to disposition this item.

3201-008-C-055

TERA's review of WPs and PGRs indicated inconsistencies or gaps in recorded data and information. Bechtel has the action to provide further information for TERA. It was suggested that appropriate personnel meet to discuss the technical details of this item.

3201-008-C-052, -053, -054

CPC indicated that they recognize the issues raised in these confirmed items as being issues which need resolution. The time scale for resolution, however, is uncertain. TERA questioned whether the CCP and/or the QVP review the 321-D forms. CPC indicated that they were uncertain and that they would check and provide the information to TERA in a written response. TERA suggested that the specific items listed in these confirmed items not be reviewed further. What is recommended is for TERA to review the program to address the general issues raised in these confirmed items. This recommendation is made because it has been unclear how it is verified that total vendor submittals have been received. After reviewing the forthcoming program to address the general issue, TERA will take a new sample of components to verify receipt of vendor documentation.

3201-008-C-056

This confirmed item is concerned with material test reports for AFW and SEP components. Bechtel has the action to respond to the specific issues raised by the confirmed item.

3201-008-F-036, -031

TERA is awaiting the receipt of final procedures for FCRs and FCNs. These new procedures have been issued but are not yet implemented. TERA requested copies of the procedures and will review them. Bechtel will provide copies to TERA. (Note: subsequent to the meeting, TERA was provided a copy of Bechtel AAPD Project Engineering Procedure 4.62.1, Rev. 1. The subject of this document is field change requests/field change notices.)

3201-008-F-018, -Z-018

This item represents a finding and its resolution, based upon the receipt of SAR Change Notice 4067 and other information as documented in the finding resolution report. The item was concerned with the method by which decay heat was calculated for the project. Sufficient information has been received to allow resolution; however, observation 3201-008-B-080 was issued to document apparent discrepancies which remain in the B&W interface criteria document for the AFW system.

3201-008-R-020, -R-027, C-005

Sufficient information was obtained to allow resolution of confirmed items number 20 and 27. The update of the FSAR clarifies the information provided and allows resolution of confirmed items 20 and 27. No further action is required for these two items. C-005 is a broader concern about the FSAR update process. TERA has the action to review this process. CPC suggested that TERA contact Nate Leech in CPC's licensing group to obtain information concerning the procedures to control the FSAR.

3201-008-C-038, C-025

TERA indicated that it appears that all information needed to disposition these two confirmed items has been received. No further action is required from the project at this time.

3201-008-C-043

TERA has requested documents M480 and M327, and was advised prior to the meeting that these documents would be available on November 30. After the meeting, TERA obtained these documents and will review them during December.

3201-008-C-048

This item is concerned with qualification of turbine controls for the AFW turbine-driven pump. This confirmed item will remain on hold until the vendor supplies documentation next year.

3201-008-R-073

This item concerns the sizing calculation for the cooling coil for the air handling units in the control room HVAC. Information obtained from Bechtel indicated that the post-LOCA condition was the most limiting for cooling coil sizing. Consequently, this item is considered resolved and the LOCA case will be used in further evaluations of the cooling coil sizing.

3201-008-C-066

This item concerns the alignment of the control room HVAC system following the three-hour pressurization period. Bechtel stated that the design basis was for the HVAC system to have the capability to be realigned to take in outside air; however, this is not an automatic function. The operator is to evaluate the situation and take action appropriate for the circumstances.

3201-008-C-074, C-075, C-076

These three items are concerned with various aspects of the control room HVAC system. TERA stated that sufficient information is now available to allow disposition of all three items. No further action from CPC or Bechtel is required at this time.

3201-008-C-084

This item is concerned with instantaneous versus short-term or time weighted average concentrations of hazardous chemicals. TERA observed that the calculation method used essentially assumes instantaneous mixing of hazardous chemicals, whereas some of the identified hazardous chemicals have lower limits which are not to be exceeded, even instantaneously. Thus, it may be possible for localized areas in the control room to be at a higher concentration than the apparent allowable. The project will review this and respond appropriately.

3201-008-C-085

This item lists several examples of potential problems with calculations. The individual items may be of relatively minor importance; however, TERA's principal concern is that collectively it is difficult to establish the adequacy of the calculational control methods. Bechtel will review the specific issues raised and also consider the collective impact of the concern. TERA stated that the specific issues are considered minor and that its recommendation is to focus on the more general concern.

3201-008-C-026

This item is concerned with a field change request to reduce the design pressure in piping downstream of a flow orifice. The change was made; however, TERA

could not locate calculations to support the change. Bechtel advised that calculations had been performed and were available. It was agreed that TERA and Bechtel personnel would review the calculation outside the meeting in accordance with the procedure for release of calculations to TERA.

3201-008-C-081

This item was concerned with a number of discrepancies in the calculation for RPSA input. Bechtel advised that the calculation which TERA reviewed had been subsequently superseded. It was agreed that TERA and Bechtel personnel would review the calculation subsequent to the meeting in accordance with the procedure to allow release of the calculation to TERA for further review.

3201-008-C-039

Bechtel is working on a response to the items raised in this confirmed item concerning qualification of cable. TERA's concerns are: (1) application of test data for 16 gauge cable to 20 gauge cable, and (2) whether unshielded cable and shielded cable can be qualified on the basis of similarity.

3201-008-C-040

This item is concerned with cable length calculations. TERA stated that sufficient information is currently available, and that no further information is required from Bechtel at this time.

3201-008-C-022

CPC advised that further information concerning the testing procedures for the level control system is now available. TERA stated that it will review any new information and is currently considering alternatives for disposition of this item.

3201-008-C-015

TERA has reviewed Appendix IA of the SMA report. This review indicates that the SMA study does not support the conclusion that flexibility can be neglected. However, review of other sections of the SMA report may provide further information to judge whether other conservatism in the analysis offset the nonconservative neglecting of floor flexibility. TERA will discuss the SMA report with CPC personnel.

3201-008-C-068

Bechtel advised that a response to this item concerning the qualification analysis for the AFW motor is forthcoming. TERA will review this information when it is received.

3201-008-C-077

Bechtel advised that an amendment to the FSAR is in the process of being distributed. It is believed that this amendment will clarify the concerns raised by TERA. CPC will also provide additional information.

These three items are all concerned with the fire protection program. Bechtel advised that the fire hazards analysis and related fire protection work is currently in progress. It was noted that Bechtel will be upgrading as much of the wall and penetrations as possible to a three hour rating. Bechtel will provide documentation which indicates that the NRC staff has concluded that the water-tight doors to the AFW pump rooms are equivalent to a three hour rating. An exception will have to be taken on the pressure relief panel. The lighting study is being reviewed. Consumers indicated that it was their position that flashlights could be used as a means of providing enough light to allow an operator to move from the control room to the remote shutdown panel. Bechtel further indicated that spurious operation is now being considered as part of the fire evaluation. The revised fire hazards analysis is scheduled to be complete late in 1984. TERA will review any information submitted to disposition these items in the near term. Items not dispositioned shortly or which depend upon the revised fire hazards analysis will be placed on a "hold" status and not reviewed at subsequent OCR meetings until sufficient information is available to allow disposition.

TERA

November 1, 1983

PRINCIPAL STAFF		
RA	✓	DRP
D/RA		DE
A/RA		CS/ISH
RC		DR/VA
PAO	✓	CS <i>orig 3</i>
SGA		AL
ENP		File <i>file</i>

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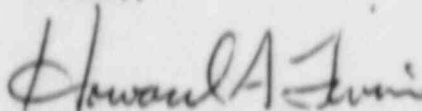
Mr. D. G. Eisenhut
Director, Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket Nos. 50-329 OM, OL and 50-030 OM, OL
Midland Nuclear Plant - Units 1 and 2
Independent Design and Construction Verification (IDCV) Program
Meeting Summary

Dear Sirs:

The third meeting on Confirmed Items was held on October 28, 1983. A summary is provided to document items discussed and actions agreed upon by the participants.

Sincerely,



Howard A. Levin
Project Manager
Midland IDCV Program

cc: Participants
Midland IDCVP Service List
R. Erhardt, CPC
D. Quammy, CPC (site)
B. Palmer, CPC (site)
D. Hood, NRC
J. Taylor, NRC, I&E HQ

Enclosure

HAL/djb

NOV 8 1983

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SERVICE LIST FOR MIDLAND INDEPENDENT DESIGN
AND CONSTRUCTION VERIFICATION PROGRAM

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SUMMARY OF THIRD MEETING ON CONFIRMED ITEMS
OCTOBER 28, 1983
MIDLAND IDCVP PROGRAM

A meeting was held on October 28, 1983 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in IDCVP Monthly Status Reports dated September 20, 1983, and October 17, 1983, and to status other outstanding items identified previously. Attachment 1 identifies the attendees of the meeting which included representatives from TERA, CPC, Bechtel, and NRC. Attachment 2 presents the agenda used for the meeting.

Howard Levin, TERA, opened the meeting with a discussion of the agenda and a summary of the purpose of the meeting. The minimum objective for the meeting was to ensure that all participants gained a complete understanding of the technical issues expressed as Confirmed Items. This is intended to enable Midland project personnel to identify additional information that may have a bearing on the issues at hand. Direct clarification or presentation of additional information by Midland project personnel is also sought so that specific issues may be further dispositioned directly.

Lou Gibson, CPC, discussed recent actions taken by the Midland project to facilitate the flow of information to TERA. These actions have included the revision of certain internal Bechtel procedures for handling the transmittal of information. Levin indicated that these procedures were reviewed by TERA and with representatives of the NRC, and that since their adoption an improvement in turnaround time has been recognized. Gibson indicated that the issue of information flow is on the agenda for management review, and that routine reports are provided to management to enable a verification that turnaround time is not compromised by other priorities.

The status of outstanding Confirmed Items and Findings was discussed next, including a cursory review of Observations and Resolved Items. A summary of significant aspects of these discussions is provided in Attachment 3 along with

any course of action identified. The responsible lead TERA personnel described each item followed by a discussion of either CPC or Bechtel personnel, as appropriate.

During these discussions, the topic of Observations was presented. Observations are items that are not considered sufficiently serious to warrant classification as Confirmed Items; however, these cannot be dismissed directly as Resolved Items because certain review and potential corrective actions may be necessary on the part of the Midland project. A consensus was developed to the effect that Observations would continue to be transmitted via the Monthly Status Reports. Any necessary clarification required by the Midland project could be gained at similar meetings. Without such questions, time will not be consumed in reviewing Observations at these meetings.

The slated topical report on the AFW system performance requirements was discussed. TERA indicated that the original concept for the report was to provide intermediate input that may be useful to the NRC in their efforts associated with the Ford Amendment. It was originally anticipated that while such a topical report is but a piece of the IDCVP scope, it would provide a glimpse into the implementation of the overall IDCVP methodology. TERA indicated that most of the outstanding Confirmed Items and Findings are associated with the AFW system and that in view of this, it is premature to draw substantive conclusions. Accordingly, it has been determined that such a topical report would merely be a topical status report and not a consummate statement on the AFW system performance requirements. The NRC representatives indicated that they would review the situation to assess whether or not the current monthly status reporting would suffice in lieu of the slated topical report.

MEETING NOTICE

ATTACHMENT 1

BECHTEL JOB NO. 7220
 PROJECT Midland Plant Units 1 and 2

SUBJECT OF THE MEETING	
Independent Design and Construction Verification (IDCV) Program	
DAY	Friday - October 28, 1983
TIME	9:00 a.m. TO 3:00 p.m.
LOCATION	Bechtel Ann Arbor Office - Conference Room 1B1
ATTENDEES	

NAME	ORGANIZATION
HOWARD LEVIN	TERA CORP.
FRANK DOUGHERTY	TERA Corp.
MARTIN JONES	TERA CORP.
Lionel Bates	TERA CORP.
RANDY CLELAND	TERA CORP.
Jerry Clements	Bechtel - Project Coordinator
Ed KRANZFELDER	BECHTEL - CONSTRUCTION
Bob HAMM	CPCO - IIC
Bob Whitaker	CPCO - MPQAD
G.S. Gower	NRC - IE/HOTS
T. Muckian	NRC - IE/HOTES
C. MORTGAT	TERA Corp
DOUGLAS M. WITT	TERA CORP.
LOUIS S. GIBSON	CPCO - Proj. Eng
JOHN KOVACH	BECHTEL - Elect.
ANIL JULKA	- Elect.
ED HUGHES	- Project Engineer
SURESH PATEL	- Mechanical
L.C. PRASAD	- Nuclear Staff
BOB TULLOCH	- Plant Design
P. Gupta	-
MIKE HENRY	-
S.K. RAO	- Civil
B.C. McCONNEL	- Civil
BOB HAMM	CPCO

INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION (IDCV)

AGENDA
for
OCTOBER 28, 1983, MEETING
ANN ARBOR, MICHIGAN

- I. Introduction and opening remarks
- II. Discussion of Confirmed Items, Findings, Observations, and Resolved Items

<u>ITEM</u>	<u>TERA LEAD</u>	<u>CPCo/B&W/BECHTEL LEAD</u>
<u>Construction</u>		
F-045	Tulodieski	B-Construction
F-046	Tulodieski	B-Construction
F-047	Tulodieski	B-Construction
C-049	Tulodieski	B-Construction
C-050	Tulodieski	B-Construction
C-052	Tulodieski	B-Construction
C-053	Tulodieski	B-Construction
C-054	Tulodieski	B-Construction
<u>Mechanical</u>		
C-005	Dougherty	(Agar)
R-017	Dougherty	B&W/B-Mechanical
C-018	Dougherty	B-Mechanical
C-020	Dougherty	B&W/CPCo
C-027	Dougherty	B-Mechanical
C-028	Dougherty	CPCo
C-048	Dougherty	B-Mechanical/CPCo
C-043	Dougherty	B-Mechanical
C-025	Dougherty	B-Mechanical/B-Plant Design
C-038	Bates	CPCo
C-066	Witt	B-Mechanical
C-073	Witt	B-Mechanical
C-074	Witt	B-Mechanical
C-075	Witt	B-Mechanical
C-076	Witt	B-Mechanical
B-057	Witt	B-Mechanical
B-067	Witt	B-Mechanical
B-063	Dougherty	B-Mechanical
B-064	Dougherty	B-Mechanical
F-031	Tulodieski	B-Plant Design
F-036	Tulodieski	B-Plant Design

<u>ITEM</u>	<u>TERA LEAD</u>	<u>CPCo/B&W/BECHTEL LEAD</u>
<u>Civil</u>		
R-037	Mortgat	B-Civil
C-015	Mortgat	B-Civil
C-068	Mortgat	B-Civil
C-077	Mortgat	B-Civil/B-L&S
<u>Electrical</u>		
Z-012	Bates	B-Electrical
C-039	Bates	B-Electrical/B-L&S
C-040	Bates	B-Electrical
C-022	Bates	B-Electrical
<u>Miscellaneous</u>		
R-041	Bates	B-L&S
R-042	Bates	B-L&S
B-044	Dougherty	B-L&S
B-059	Dougherty	B-L&S
B-061	Witt	B-Control Systems

II. Discussion of Action Items and Logistics for Information Exchange

ATTACHMENT 3

DISCUSSION OF CONFIRMED ITEMS, FINDINGS, OBSERVATIONS, AND RESOLVED ITEMS

3201-008-F-045, -046, -047

All three of these items relate to the storage and maintenance area of review. F-045 and F-046 are specific discrepancies noted in the storage and maintenance programs, while F-047 is more generic as it questions the process by which vendor recommended storage and maintenance requirements are reflected in project procedures. TERA is currently reviewing actions taken by the project to improve the storage and maintenance programs. TERA is also currently reviewing the charter for a new organization with full-time responsibility for these issues, as well as interviewing key personnel. The emphasis of these efforts is on how vendor requirements are reconciled and the effectiveness of implementation. TERA will also review specific changes to the in-place maintenance procedure for the AFW pump motor and witness a future overhaul of the AFW pumps and turbine.

3201-008-C-049

TERA indicated that a response was received from Bechtel which addressed physical changes to be made which include placing a cover on the cable tray to create a barrier between the noted channels. It was concluded that this action would address the noted separation issues in the locations covered, but not in the air-lined region as the cables terminate into cabinets. CPC indicated that they had uncovered similar problems and that the EFE staff (team 24) was investigating solutions such as wrapping. CPC is also looking into gaining dispensation from the 3-foot separation requirement in the vicinity of cabinet entries. TERA will factor these actions into the continuing review.

3201-008-C-050

TERA indicated that a response was received from Bechtel which addressed the engineering significance of the noted cable being routed outside of its scheduled via. It was observed that guidelines in the cable overinspection program may not be definitive in establishing criteria for dealing with such a routing. Accordingly, GC personnel may have interpreted such circumstances in different ways. TERA will complete a review of the technical arguments presented in this specific instance and expand the existing sample to verify that the overinspection has been consistently applied.

3201-008-C-052, -053, -054

All three of these issues relate to documentation that TERA was unable to secure. C-052 addresses the completeness of vendor supplied documentation, while C-053 and C-054 address construction/installation documentation. At this juncture it is not clear whether TERA could simply not locate the information, if it is misplaced, in process, or never created. Bechtel will attempt to locate the noted documents. TERA will review the closeout procedure for vendor supplied documentation including site and Ann Arbor activities. Discrepancies between direct spec requirements and 321D requirements will be reviewed further. TERA questioned whether the CCP has a focus on a verification of completeness of vendor supplied documentation. CPC indicated that it did in a peripheral manner, primarily the installation requirements. C-053 and C-054 bear directly on items that are within the CCP scope and are slated to be verified as the program progresses. Accordingly, TERA will review the closeout of these specific items after the CCP has been through and expand the sample at a future date to verify that similar items are caught and resolved.

3201-008-Z-012

TERA described the bases for resolving this Finding and indicated that no further action is contemplated at this time.

3201-008-C-039

TERA has received a letter from Bechtel on this item; however, there is still some discussion of the applicability of the test data to the actual design where aluminized mylar tape is used on some cables and not others. Bechtel will provide further information justifying their position that the qualification test data is applicable.

3201-008-C-040

Bechtel indicated that the lengths shown on the circuit schedule are shop-cut lengths and may not necessarily be actual installed lengths. Notwithstanding this, Bechtel has indicated that for the specific MOV application, calculation QPE-8 is too conservative and not necessarily applicable. They further indicated engineering judgment is the principal means by which cables are sized. TERA indicated that this process would be reviewed along with the methods of QC verification. Additional sampling of sizing under these applications may be warranted pending the process review.

3201-008-C-022

TERA indicated that a preliminary review was made of the startup test procedure and that it was judged that it may not fully exercise the SG level control system to the extent that its performance under all plant conditions may be verified. CPC committed to providing justification addressing why the startup testing and hot functional testing would suffice to qualify the system.

3201-008-C-025

TERA has received a rate calculation for SG fill and is currently reviewing it. DCAR 731 has been written which addresses changes to switching hardware associated with FOGG inversion. This information will be transmitted to TERA for review.

3201-008-R-017

TERA indicated that full clarification was received and the issue is resolved.

3201-008-C-005, -018, -020, -027, -028

TERA indicated that each of these issues have been outstanding and that Bechtel's September 30, 1983 letter is anticipated to be sufficient for TERA to effect further disposition. No further Midland project action is required at this time.

3201-008-C-048

Bechtel indicated that the original spec required qualification to a 120° F environment; however, conservative treatment of the blackout condition dictated raising the qualification temperature to 150° F. Later calculations established pump room temperatures to be 121° F. The vendor is currently qualifying to this level. Documentation will be available in early spring, 1984 at which time it will be forwarded for TERA's review. This item will be placed on "hold" and not discussed at future meetings until the documentation is received.

3201-008-C-038

Bechtel indicated that additional information in addition to the vendors previous telex was being forwarded by the vendor. CPC questioned whether the 100 gpm AFW flow would be maintained under a station blackout condition with a low decay heat load. TERA indicated that resolution of this item will require evaluating scenarios such as blackout with low decay heat load to determine whether 100 GMP can be maintained. TERA will review the later vendor submittal upon receipt.

3201-008-C-066

Bechtel indicated that after three hours the air intake can be opened manually and that calculations assume that this is done at three hours after isolation, followed by continuous operation in that mode thereafter.

3201-008-C-073

Bechtel indicated that LOCA is the limiting case for external heat loads to the control room because high energy line breaks do not affect adjacent areas.

3201-008-C-074

Bechtel indicated that the station blackout event is not a design basis event and, therefore, the 75° F control room temperature does not have to be maintained under these conditions. Bechtel estimated that under design basis assumptions, the maximum temperature that could be reached in the control room could reach 110° F, two hours into the station blackout. Bechtel has documented this in a calculation.

3201-008-C-075

Bechtel indicated that they assume that the double control room doors are an airlock. They referenced p. 6.4-7 of the FSAR.

3201-008-C-076

The 2000 cfm is documented on flow diagram M-765. The 104° F is a reference design basis in many areas of the FSAR. The 96° FDB and 79° FWB are based upon Saginaw meteorological data. Accordingly, Bechtel will clarify these references in the subject calculation.

3201-008-F-031

TERA indicated that review was continuing to assess the process by which field changes are reconciled with the design. As elements of the CCP are directed at related issues, TERA will factor this input into the overall evaluation. In view of similar issues recently identified by MPQAD associated with the FCR/FCN process, additional emphasis will be placed in this review area.

3201-008-F-036

TERA indicated that additional information had been received from Bechtel which will enable a further disposition of this item.

3201-008-C-043

Bechtel indicated that the M-480 Piping Class Sheets provide the classification criteria for various seismic and quality categories for piping. They indicated that while the subject piping was not subject to QA requirements, it was installed according to the M-327 spec. Bechtel will eventually walkdown all piping in this category to verify general arrangement and quality of installation. TERA will review this information and note any required additional clarifications.

3201-008-C-015

Bechtel indicated that the vertical floor flexibility study was not the only basis which supports the statement in the C-501, Civil/Structural Design Criteria document that floor flexibility need not be considered in the seismic analysis of the Midland plant structures. Reference was made to a study by SMA which includes this behavioral effect. Bechtel could not comment on the results of this study. TERA reiterated the issues documented in C-015. It was determined that the subject study alone was insufficient and that the SMA study should be reviewed to further disposition the item.

3201-008-C-068

Bechtel will further investigate the noted discrepancy and document the results in a letter to TERA.

3201-008-C-077

Bechtel indicated that Sections 3.9 and 3.10 of the FSAR were purged at the request of the NRC to be replaced by NRC's "short form." CPC has recently taken responsibility for the SQRT issue and should be consulted for further information regarding the status of the SQRT review and FSAR update process.

TERA

September 7, 1983

Mr. James W. Cook
Vice President
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Mr. J. G. Keppler
Administrator, Region III
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

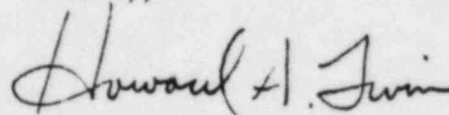
Mr. D. G. Eisenhut
Director, Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket Nos. 50-329 OM, OL and 50-030 OM, OL
Midland Nuclear Plant - Units 1 and 2
Independent Design and Construction Verification (IDCV) Program
Meeting Summary

Dear Sirs:

The second meeting on Confirmed Items was held on August 26, 1983. A summary is provided to document items discussed and actions agreed upon by the participants.

Sincerely,



Howard A. Levin
Project Manager
Midland IDCV Program

cc: Participants
Midland IDCVP Service List
F. Buckman, CPC
D. Miller, CPC (site)
B. Palmer, CPC (site)
D. Hood, NRC
J. Taylor, NRC, I&E HQ
P. Keshishian, NRC, I&E HQ

Enclosure

HAL/djb

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TERA CORPORATION
BETHESDA, MARYLAND 20814

SEP 12 1983

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DRP	SLO
DRM	RC
DMSP	
OE	
ML	
OL	FILE

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**SUMMARY OF SECOND MEETING
ON CONFIRMED ITEMS
AUGUST 26, 1983
MIDLAND IDCVP PROGRAM**

A meeting was held on August 26, 1983 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in IDCVP Monthly Status Reports dated May 27, 1983, July 15, 1983, and August 16, 1983. The status of actions taken in response to IDCVP Findings was discussed as well as programmatic options associated with the Ford Amendment. Attachment 1 identifies the attendees of the meeting which included representatives from TERA, CPC, Bechtel, NRC, and B&W. Attachment 2 presents the agenda for the meeting.

The meeting opened with an introduction of participants. The initial discussions focused on the schedule and logistics for providing additional documentation concerning outstanding items. TERA reiterated details of the IDCVP reporting process, differentiating between the type of information required in response to Confirmed Items versus Findings or Findings resolution. It was pointed out that information associated with Confirmed Items should generally be existing information that may not have been previously available to the IDCVP project team or, alternatively, brief clarification of existing information. Findings or Findings resolution may require the generation of new information. All parties agreed that information supporting Confirmed Items and other existing information would be transmitted to TERA within 10 days of request with an indication of the status (i.e., partial or complete) of the response relative to specific Confirmed Items. The schedule for Findings or Findings resolution would be worked out on a case-by-case basis. This agreement will provide an improved basis for IDCVP planning.

The status of outstanding Confirmed Items and Findings, as well as new Confirmed Items and Findings, was discussed next. The responsible lead TERA personnel described each item followed by a discussion by representatives of either CPC, Bechtel, or B&W as appropriate. Mr. Howard Levin, TERA,

Mr. Lou Gibson, CPC, Mr. Jerry Clements, Bechtel, and Mr. Jim Agar, B&W, coordinated the discussions for their respective organizations.

The following descriptions, by item, highlight important issues discussed and any course of action identified during the meeting.

3201-008-C-005

This item addresses a potential generic issue related to conflicting data on AFW system design parameters associated with Confirmed Items C-017, C-018, C-020, C-027, and C-028. CPC pointed out that apparently conflicting design criteria may, in fact, be valid depending upon how these criteria were utilized in specific design calculations/evaluations. It follows that what may appear to be a bounding assumption in one scenario may not be bounding in another, particularly if applied out of context (i.e., a conservative assumption in one calculation may not be the most conservative in another). They further indicated that in certain circumstances the Midland plant may be designed to a specific set of criteria, yet evaluated against other criteria such as NRC Branch Technical Positions. TERA questioned the process by which the FSAR was checked and cross-checked within Bechtel groups and between groups. Bechtel described the procedure. Bechtel committed to provide clarification in conjunction with their response to Confirmed Items C-017, C-018, C-020, C-027, and C-028. TERA will review this information and also selectively evaluate FSAR changes.

3201-008-C-017

B&W indicated that the AFW flow rates documented in B&W document BAW 1612, Rev. 1, do not apply to Midland. Midland AFW flow requirements are established in B&W document 32-0525-00, January 27, 1974. A letter and supporting evaluation from Agar, B&W, to Gibson, CPC, dated August 25, 1983 addresses the acceptability of the 850 gpm AFW flow requirement. TERA will review this reference. Bechtel will provide further clarification and document along with a response to C-005.

3201-008-C-018

This item questions which decay heat curve the Midland project is committed to meeting (i.e., B&W curve or BTP APCS-9.2). Bechtel indicated that SAR Change Notice No. 4067 will clarify any potential misinterpretation associated with the design bases for the decay heat load. B&W indicated that the Midland design was based upon a B&W decay heat curve documented in B&W manual 18K1, December 3, 1969. In the August 25, 1983 letter, a comparison is made to BTP APCS-9.2 criteria. TERA will review the SCN and the August 25, 1983 letter. Bechtel will provide further clarification and document along with a response to C-005.

3201-008-C-020

Bechtel will provide further clarification along with a response to C-005.

3201-008-C-027

Bechtel indicated that SAR Change Notice No. 4067 clarifies the Midland design basis to be 2552 MWt. TERA will review this SCN.

3201-008-C-028

It was noted that this item primarily relates to the consistency between design parameters. The impact on the reactor coolant system components was discussed and generally agreed by all parties to be insignificant. Bechtel and CPC indicated that if service water was used as a source of AFW an evaluation would follow including an evaluation of the impact of low water temperature, as appropriate. Bechtel will provide further clarification and document this along with a response to C-005.

3201-008-C-025

CPC indicated that a DCAR was pending which simplifies the method by which an operator takes action to invert FOGG. Bob Hamm, CPC and Brent Brooks,

B&W were identified as contacts on this issue. CPC will send TERA the DCAR and TERA will initiate further review to evaluate revised direction being taken with respect to FOGG and ATOG.

3201-008-C-031

Bechtel indicated that they had completed actions necessary to correct deficiencies noted with Findings F-032 thru -036 and that they would document these formally. TERA indicated that review was continuing to assess the process by which field changes are reconciled with the design.

3201-008-C-037

TERA indicated that this specific issue would be considered resolved in view of FSAR revision 47 which corrects the noted inconsistency. In conjunction with continuing efforts related to C-005, TERA will selectively evaluate FSAR changes.

3201-008-C-038

Bechtel indicated that the AFW pump minimum flow valve did not have to be powered from battery backed power because recirculation through the line was not required during the assumed 2-hour blackout period. Bechtel has received a telex from the pump vendor attesting to the pumps performance at a minimum flow of 100 gpm. Bechtel will secure backup for this ascertainment and transmit it to TERA for review.

3201-008-C-022

Bechtel indicated that the steam generator level control system performance would be tested during the startup test procedures. TERA questioned whether the full performance range under potential varying plant conditions could be simulated during these tests and if analyses might be required to supplement the startup testing. CPC indicated that such testing is considered sufficient to demonstrate the adequacy of the system. Bechtel described a Foxboro Shop test

of the control system which they witnessed. Foxboro initiated this test even though it was not required by spec due to the complexity of the control loop. CPC will transmit the requisite startup test procedure for TERA's review.

3201-008-C-048

Bechtel is currently pursuing documentation from the vendor documenting the equipment capability to withstand a 120°F maximum temperature. They indicated that the 120°F has been required by specification. Bechtel will provide the documentation for TERA's review when received.

3201-008-F-012

MCAR 68 was initiated in June addressing this Finding. A final report was completed on August 15, 1983 which documents both specific and generic actions taken for resolution. TERA will review this information.

3201-008-F-036

Bechtel acknowledged that due to inattention to detail certain dimensional errors on drawings do exist where portions of these drawings have been modified due to field changes. The Plant Design group has reviewed 341 FCRs against isometric drawings and has found dimensional discrepancies associated with 9 FCRs. Accordingly 7 isometric drawings will be revised. Bechtel pointed out that after the piping is installed, dimensional discrepancies to the building centerlines have little impact. Bechtel will summarize the results of their evaluation in a letter to CPC. TERA will review this information when available.

3201-008-C-047, F-045, F-046

TERA indicated that the two Findings relate to specific discrepancies noted between vendor recommended storage and maintenance requirements and project procedures and actions. The Confirmed Item was generated later after several similar instances were noted by the ICV project team, potentially pointing to a

more generic issue. CPC and Bechtel acknowledged the situation presented by these OCRs and have created a Task Force whose charter will be to reconcile manufacturer and project requirements, status the current situation and see that reconciled storage and maintenance procedures are followed in the future. TERA will review the Task Forces' charter and selectively evaluate the implementation of their activities. MPQAD representatives indicated that they had completed an audit in this area and would forward their report to TERA for review.

Programmatic options associated with the Ford Amendment were discussed. CPC described the options that were identified during an August 5, 1983 public meeting in Bethesda. The NRC representatives questioned salient features of each of the identified options. A specific conclusion was not reached on this issue. The NRC representatives indicated that future discussion would take place after they had consulted with their management.

A general discussion was held relative to the interface between the CCP and ICV programs. A principal issue is the extent of construction verification progress that the ICV can attain in view of the status of project completion and the fact that the CCP does not have full approval by NRC. TERA indicated that in view of the fact that the CCP must be considered the primary construction vehicle, that independent verification should not take place until the CCP has "QC'ed" portions of work. It was agreed that proceeding on this basis was feasible verses waiting until each of the three IDCVP systems were turned over in whole. While the proposed ICV approach has schedular advantages, certain efficiency and resource tradeoffs are apparent. These will be the subject of future discussions.

The meeting was adjourned.

MEETING NOTICE

Attachment 1

BECHTEL JOB NO. 7220
 PROJECT Midland Plant Units 1 and 2



SUBJECT OF THE MEETING

INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION (IDCV)

DAY Friday, August 26, 1983

TIME 9:00 a.m. TO 4:00 p.m.

LOCATION Bechtel AAO, Conference Room 1/B1

ATTENDEES

NAME	ORGANIZATION
Jerry A. Clements	Bechtel - Project Coordinator for IDCV
Louis Hubson	Consumers - Proj. Engr.
Robert Warynick	NRC - RIII
George C. Fower	NRC - IE - HQ
William Miller	NRC - NRP - DL
R.C. Hollan	Bechtel Quality Engr.
R. F. TULLOCH	Bechtel PLANT DESIGN
R. NICOLAUS	BECHTEL - MECH
A. F. MAU	BECHTEL - MECHANICAL
E. M. HUGHES	Bechtel - Project Engineer
J. P. KNIGHT	CPCO - MP&D Jackson
M. Eagle	CPCO DRAE A ²
Jim Agar	BEW Project Engineer
Brian Harrington	CPCO - Lic
G. E. SETKA	TERA
L. D. Bates	TERA
R. P. SNAIDER	TERA
D. B. TUODIESKI	TERA
M. B. JONES	TERA
F. A. Dougherty	TERA
H. LEVIN	TERA
R. Berg	Bechtel - licensing
B. M. Budzick	CPCO
N. Leech	"

ATTACHMENT 2

AGENDA FOR AUGUST 26, 1983 IDCVP MEETING
BECHTEL OFFICES
ANN ARBOR, MICHIGAN

<u>Item</u>	<u>Lead</u>	<u>Time</u>
1. Response to Confirmed Items		
A. Discussion of the schedule for providing additional documentation concerning outstanding items	H. Levin/ L. Gibson/ J. Clements	9:00 am
B. Status of IDV Confirmed Items (items discussed at June 3 meeting which are still at the Confirmed Item stage): C-005, C-017, C-018, C-020, C-025, C-027, C-028, C-031, C-037, C-038	CPC/ Bechtel	9:30 am
2. New Confirmed Items		
A. C-022	L. Bates	11:00 am
B. C-047	D. Tulodieski	11:15 am
C. C-048	F. Dougherty	11:30 am
3. LUNCH		
4. Status of Findings: F-012, F-036	CPCO/Bechtel	12:30 pm
5. New Findings: F-045, F-046	D. Tulodieski	1:00 pm
6. Discussion of programmatic options associated with the Ford Amendment	D. Hood	1:15 pm
7. Interface of CCP and ICV programs	D. Tulodieski/ L. Gibson	2:30 pm
8. Summary	H. Levin	3:00 pm

SERVICE LIST FOR MIDLAND INDEPENDENT DESIGN
AND CONSTRUCTION VERIFICATION PROGRAM

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Mr. Paul Rau
Midland Daily News
124 McDonald Street
Midland, Michigan 48640

① RFW
② File SALP

MAY 24 1983

Docket No. 50-329
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

This is to confirm the arrangements between Roy Wells of Consumers Power Company and John J. Harrison of the Region III staff scheduling June 24, 1983 at 9:00 a.m., as the date and time to discuss the Systematic Assessment of Licensee Performance (SALP) for the Midland site. This meeting is to be held at the Quality Inn, Midland, Michigan.

While this meeting is a presentation and discussion forum between Consumers Power Company and the NRC, it will be open to other interested parties as observers. Because of possible space limitations, those outside the licensee and NRC staffs should make advance notification to the regional office by COB June 20, 1983.

If you have any questions concerning this SALP Meeting, we will be happy to discuss them with you.

Sincerely,

"Original signed by R. F. Warnick"

R. F. Warnick, Director
Office of Special Cases

cc: DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
The Honorable Charles Bechhoefer, ASLB
The Honorable Jerry Harbour, ASLB
The Honorable Ralph S. Decker, ASLB
William Paton, ELD
Michael Miller
Ronald Callen, Michigan Public Service Commission
Myron M. Cherry
Barbara Stamiris
Mary Sinclair
Wendell Marshall

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OFFICE	Colonel Steve J. Gidler (P.E.)	RIII		
SURNAME	Howard Levin (TERA)	Harrison/ls	Tambling	RFW Warnick
DATE	Billie P. Garde, GAP	5/23/83	5/23/83	5/23