

# TERA

January 20, 1984

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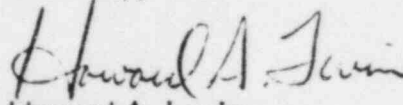
Mr. D. G. Eisenhut  
Director, Division of Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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 fifth meeting on Confirmed Items and Findings was held on January 4, 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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January 20, 1984

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J. Agar, B&W  
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SUMMARY OF FIFTH MEETING  
ON CONFIRMED ITEMS AND FINDINGS  
JANUARY 4, 1984  
MIDLAND IDCVP PROGRAM

A meeting was held on January 4, 1984, at Bechtel's Ann Arbor, Michigan offices, to obtain additional information related to confirmed items identified in the seventh IDCVP Monthly Status Report dated December 16, 1983, and to status other outstanding items identified previously. Attachment 1 identifies the attendees of the meeting, which included representatives of TERA, CPC and Bechtel. 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. Initially, a brief discussion of programmatic issues was held. The programmatic issues are concerned primarily with interfaces among TERA, CPC and Bechtel.

Bechtel stated that they have developed a procedure for control of calculations issued to TERA which will enable IDCVP team members to identify calculations which have been revised and the reason for those revisions. The Bechtel discipline groups are currently updating the list of calculations and Bechtel expects to issue the list and procedure shortly.

Rob Burg, Bechtel, who is the primary interface between TERA and Bechtel, stated that he will be updating the Action Item List which Bechtel uses to track progress on OCRs. He expects to issue the updated list by January 16.

The use of the so called "ten-day clock" for determining when Confirmed Items may be converted into Findings was discussed. TERA stated that the "ten-day clock" starts with the first OCR meeting at which a Confirmed Item is discussed. If no further information is forthcoming during the ten days following the meeting, and if the project does not indicate that such information is being compiled, then TERA will evaluate the necessity of converting a Confirmed Item into a Finding. On the other hand, if information is received during the ten-day period, or if Bechtel or CPC indicate that it is expected to be available

thereafter, TERA will withhold conversion of the item to a Finding until after it has had an opportunity to review the additional information.

All parties were reminded that the intent of the OCR process is not to generate new information to respond to a Confirmed Item. If CPC or Bechtel have no further information, they may state that they believe TERA has sufficient information. It is then TERA's responsibility to evaluate that information and determine the disposition of the OCR. If new information is to be developed, it is desirable to discuss such information at OCR meetings to ensure a correct understanding of the issue and its significance.

Meeting attendees were also reminded that the TERA Engineering Program Plan does not require written responses to Confirmed Items. Alternatives such as a noticed meeting to exchange information on OCRs is acceptable, as is verbal information regarding additional documents which should be reviewed for further information.

TERA announced that its engineering evaluation of the diesel-generator building was being released on January 4 (i.e., on the meeting date). The evaluation concludes that existing cracks, generally being of small size, are not indicative of a condition that would compromise the building's capability in meeting its intended performance requirements.

The agenda was rearranged to allow discussion of civil/structural OCRs first, to be followed by discussions of the other OCRs.

It was noted that a large number of civil/structural items were included in the December 16 Status Report. All parties at the meeting recognize that there is a varying degree of significance to the OCRs. Several methods of addressing the civil/structural OCRs were discussed. TERA stated that it is not necessary that re-analysis be done. In some cases, the IDCVP only needs to know why certain assumptions were made or needs information to reconcile apparent discrepancies between two or more documents. It was concluded that the most expeditious way of clearly addressing the civil/structural OCRs is to hold a separate meeting

on these OCRs in conjunction with the next OCR meeting. It was subsequently agreed that the next OCR meeting would involve two days, January 31 and February 1. The civil/structural items will be discussed January 31, and other OCRs, including any new OCRs, will be discussed February 1. As has been done in the past, a separate meeting notice will be forthcoming with the agenda. It is expected that this two-day meeting will take place in Bechtel's Ann Arbor offices.

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 December 16 was discussed. This is intended to enable Midland project personnel to identify additional information that may have a 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 further disposition the item. A summary of the significant aspects of the discussions is provided in Attachment 3, along with any course of action identified. The responsible TERA personnel described each item, followed by a discussion by either CPC or Bechtel personnel, as appropriate.

JANUARY 4, 1984  
BECHTEL OFFICE, ANN ARBOR

IDCV PROGRAM  
FIFTH OCR STATUS REVIEW MEETING

<u>NAME</u>	<u>AFFILIATION</u>
ROB BURG	BECHTEL / NUCLEAR
Bruce Henley	CPCO
LOU GIBSON	CPCO
JERRY SETKA	TERA
FRANK DOUGHERTY	TERA
Chris MORTGAT	TERA
JOE MARTORE	TERA
YON TULODIESKI	TERA
Bob Whitaker	CPCO.
DAVE HAAS	CPCO
G R EAGLE	CPCO - DQAE
Subbar K. Bose	Bechtel / civil
Doug Reeves	Bechtel - civil / soils
STEVE HARTSTERN	BECHTEL CIVIL/soils
HOWARD LEVIN	TERA
S. RAO	BECHTEL / Civil Struct
DOUG WILMS	BECHTEL / Civil, Seismic
DALE HOARE	"
Mark Mau	Bechtel / Mechanical
Amin Amin	
Dennis Kelly	Bechtel / Electrical
Philip Leaser	Bechtel / Mechanical
Anil Gulka	Bechtel / Electrical

AGENDA FOR JANUARY 4, 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	
● F-031, F-036	Tulodieski
● F-052*	"
● F-053*	"
● F-054*	"
● F-055*	"
● F-056*	"
● F-091*	"
● C-093*	"
● C-094*	"
● C-095*	"
● C-096*	"
B. Mechanical/Systems	
● F-043*	Dougherty
● C-087, C-088, C-089	"
● R-066*	Witt
● C-084	"
● C-085	"
● C-112*	Setka
C. Electrical	
● C-097*	Dougherty
● C-109*	Setka
● C-110*	"
● C-111*	"

<u>Item</u>	<u>TERA Lead</u>
D. Structural	
• C-015	Mortgat/Martore (seismic anal.)
• B-100*	"
• C-099*, C-101 thru C-108*	"
• C-071*, C-113 thru C-117*	Martore (general)
• B-118*	"
• C-068, C-069	Martore (seismic EQ)
• C-119 thru C-122*	"

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 November 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-022 |
| • C-025 | • C-026 |
| • C-038 | • C-039 |
| • C-040 | • F-047 |
| • C-048 | • F-049 |
| • F-050 | • C-074 |
| • C-075 | • C-076 |
| • C-077 | • C-081 |
| • C-092 |         |

### ATTACHMENT 3

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

3201-008-C-015. This OCR is concerned with vertical floor flexibility. TERA has reviewed portions of the SMA study and is continuing to review additional sections. No further Midland project action is required at this time.

3201-008-C-099. This OCR noted possible inconsistencies in nodal displacement calculations for the seismic stick model. Bechtel will advise TERA of how each portion of the calculation was used.

3201-008-C-101. In a calculation package reviewed by TERA, reference was made to a consistency check between the stick model and the finite element model. However, TERA could not locate the consistency check. CPC stated that they will determine whether the check stated in the calculation was, in fact, performed. If it was performed, it will be made available to TERA. If it was not performed, this OCR will be discussed at the next OCR review meeting.

3201-008-C-102. In reviewing inputs and computer runs, apparent inconsistencies were noted. TERA stated that the concern is more with the checking process than with the technical issues which may be minor. CPC stated that they consider the work done by SMA to be a verification of Bechtel's work. TERA then asked whether the SMA work is considered part of the design basis. CPC stated that it was not part of the design basis, and that the Bechtel work is the design basis. CPC stated that they will review both the technical issues and the more generic concern.

3201-008-C-103. This OCR is concerned with the possible use of approximate equations beyond their scope of applicability. The issue raised by the OCR is how the determination was made that the specified equations could be used. It was noted that, with appropriate justification, equations may be used beyond their normal range of applicability. Bechtel will respond and discuss the significance of their use of the equations.

3201-008-C-104. This OCR is concerned with potential inconsistencies and errors in mass moment of inertia calculations. The OCR contained eight specific items of concern. Bechtel has performed a new calculation which addresses Items 1, 4 and 5 of the OCR. Bechtel stated that they will not respond to the OCR until after TERA has reviewed the new calculation. This is to enable Bechtel to make a single response to both the remaining OCR issues and any identified during the review of the new calculation.

3201-008-C-105. This OCR questioned the use of computer program CE207 where it may not be applicable. Bechtel will provide its justification for use of the program. The computer program uses a procedure developed by Tsai, which is applicable when a specific ratio is greater than 2, whereas it appears that for the auxiliary building the ratio is less than 2.

3201-008-C-106. Additional information is required to justify assumptions made in the soil structure interaction. The Midland project will review this item.

3201-008-C-107. This OCR is concerned with the stick model assumptions. The first item, concerning locating sticks at the center of shear areas rather than the shear center, will be reviewed further by TERA. Item 2 will be reviewed by Bechtel and a response will be forthcoming.

3201-008-C-108. Ten items regarding stick model assumptions are listed in this OCR. TERA requested justification of these assumptions.

3201-008-C-071. This OCR identified a calculation which referenced a superceded computer run which is no longer available. TERA requested further information regarding the status of the calculation which was reviewed, as well as the apparently superceded reference.

3201-008-C-113. This issue is similar to that raised in OCR 3201-008-C-102, concerning consistency of input and computer runs. Bechtel responded that the worst case load combinations were used and that they would provide a justification as to how these were arrived at.

3201-008-C-114. Bechtel stated that they performed the calculation for slab moment capacity correctly. They will respond to this issue.

3201-008-C-115. TERA stated that clarification of live load criteria is needed. Bechtel stated that loads for heavy equipment were included in the evaluations. TERA asked for clarification of what criteria are used for differentiating between what is included as part of the average load and what is considered as specific equipment loads. It was noted that TERA has not reviewed calculations for structural steel because the project is still completing this work.

3201-008-C-116. This OCR noted an apparent conflict between the FSAR and Bechtel C-501-Q, Rev. 12. Bechtel stated that Revision 13 is in process, and will resolve the conflict between the FSAR and the other document. Bechtel stated item 4 refers to a typo that was corrected in Rev 49 of the FSAR.

3201-008-C-117. TERA explained its concern with the evaluation of stresses at slabs and walls. Bechtel stated that it will review the calculations with the people who performed them, and respond appropriately.

3201-008-C-069. Bechtel stated that the specific seismic qualification is essentially complete, and that the equipment is qualified. However, some documentation is still needed. Bechtel further stated that it generally accepts vendor assumptions used in SQRT work, unless they are unreasonable.

3201-008-C-119. Bechtel stated that they will justify why the actuators evaluated are considered representative. They also stated that pipe end forces are generally not included in the analysis, but that Bechtel has identified this as a concern. Bechtel stated that a Nutech document is the design basis for the SQRT program.

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**Note:** Attachment 4 provides a summary of which OCRs (or parts of OCRs) do not require a response at this time. CPC and Bechtel will try to provide available additional information prior to the January 31 meeting on civil/structural OCRs.

3201-008-C-120, 121, and 122. These equipment qualification issues will be reviewed with Nutech, and the project will advise TERA further.

3201-008-C-093 through-096. These items resulted from an HVAC review at the site. Site representatives were present at the meeting, and stated that they disagree with a number of the statements made in the Confirmed Item reports. Additional documentation is available at the site to justify their position. TERA will arrange a site visit to review this additional documentation. Specific information discussed on these OCRs were as follows.

3201-008-C-093. CPC stated that they have an open QA finding concerning the deviations between standards and specifications. They stated that the FSAR is being amended to document exceptions taken to the AWS specifications. CPC will respond to the issues raised.

3201-008-C-094. Additional information is available at the site concerning this item.

3201-008-C-095. CPC has additional information available at the site regarding welder qualification.

3201-008-C-096. CPC disagrees with the concern stated in the OCR. TERA will review additional information at the site.

3201-008-F-052 through F-056. In accordance with the Engineering Program Plan, written responses will be made by the project. These findings are all concerned with the construction verification program.

3201-008-C-112. This OCR noted possible discrepancies in a Bechtel calculation for sizing the emergency diesel generator exhaust lines. It appears that a calculated pressure drop is in excess of that allowed by the manufacturer, although only by a small amount. No justification is presented for allowing this difference to exist. Furthermore, some of the parameters may not be sufficiently conservative. Bechtel will review the calculation and respond accordingly.

3201-008-C-109. This OCR noted an apparent conflict between the design and IEEE-387. Bechtel will review and advise TERA.

3201-008-C-110. TERA noted variances between a load tabulation compiled by TERA and that prepared by Bechtel. Bechtel stated that they agree with some, but not all, of the comments. SAR Change Notice 4082 affects Comment #4 in the Confirmed Item. Bechtel has also revised QPE-1 and TERA will review this calculation.

3201-008-C-111. This OCR noted current discrepancies among various FSAK statements regarding the capability of the battery charger. Bechtel will review and determine whether they consider a SAR change notice to be required in order to clarify their intent.

3201-008-F-043. This Finding involves control of seismically analyzed but non-Q pipe. It appeared to TERA that document M480 was in conflict with statements made by Bechtel to resolve the Confirmed Item. TERA will review the written response which is required as a result of the Finding. TERA requested Bechtel explain the process by which field personnel determine whether the "hanger critical procedures of M327 are applied, particularly in the case of a line containing sections which are hanger-critical, as well as those which are not hanger-critical.

3201-008-C-087 through-089. These OCRs involve fire protection and were discussed at the previous meeting. Bechtel confirmed that they are planning to provide TERA with additional information.

3201-008-R-066. This item was resolved based on further information received from the project. It was stated that it is a design basis to re-establish outside air for the control room HVAC following the three-hour isolation period. TERA stated that, as a result of this additional information, Item 066 was resolved, and that re-establishment of outside air will be considered as a design basis.

3201-008-C-084. This item was discussed at the November 30th meeting, and concerns the method of calculating the concentration of toxic substances in the control room when the substance is subject to ceiling threshold limit values. The project will provide a response later.

3201-008-C-085. This OCR was also previously discussed, and the project confirmed that they are reviewing both the technical and procedural issues implicit in the OCR.

3201-008-C-097. TERA's review of the control room HVAC system indicates that re-establishment of make-up flow to the control room from outside air is not single-failure proof. CPC stated that it may not be necessary to apply the single-failure criterion to the condition. They will document their position in this matter.

SUBJECT CIVIL STRUCTURAL

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

OCR STATUSPREPARED BY Alle DATE 1/5/84

PROJECT NO. \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

CONTROL I.D. NO. \_\_\_\_\_

OCR #	RESPONSE NEEDED?	COMMENTS
015	NO	
068	YES	
069	YES	statement answering item 1 through 4
099	YES	
100	NO OBSERVATION	
101	YES	
102	YES	CHECKING PROCEDURES IN GENERAL, THE ONE USED FOR THIS CALC. KENNEDY'S TESTIMONY
103	YES	JUSTIFICATION AND IMPACT
104	PARTIAL	ITEM 2, 3, 6, 7, 8 NEED BE ADDRESSED
105	YES	JUSTIFICATION
106	YES	
107	PARTIAL	ITEM 2 ONLY NEED BE ADDRESSED
108	YES	JUSTIFICATION AND IMPACT
113	YES	DESCRIBE PROCEDURE
114	YES	
115	YES	DESCRIBE HOW EQUIPMENT LOAD IS INCLUDED IN SLAB ANALYSIS

SUBJECT CIVIL STRUCTURAL  
OCR STATUS  
PROJECT NO. \_\_\_\_\_  
CONTROL I.D. NO. \_\_\_\_\_

SHEET 2 OF 2 SHEETS  
PREPARED BY clu DATE 1/5/84  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_



OCR #	RESPONSE NEEDED ?	COMMENTS
116	YES	
117	YES	
118	NO OBSERVATION	
119	YES	
120/122	YES	