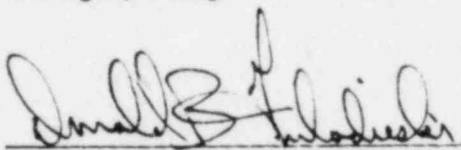


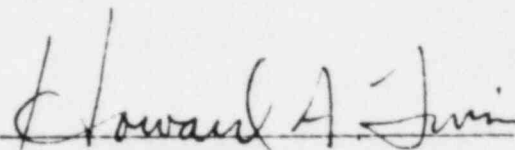
MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM  
MONTHLY STATUS REPORT  
NUMBER 3  
PERIOD JULY 1, 1983 THROUGH JULY 31, 1983

Prepared by:

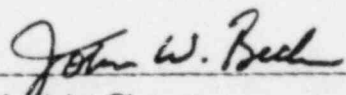
  
\_\_\_\_\_  
Manager, Design Verification

  
\_\_\_\_\_  
Manager, Construction Verification

Reviewed by:

  
\_\_\_\_\_  
Project Manager

Approved by:

  
\_\_\_\_\_  
Principal-in-Charge

MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION  
VERIFICATION PROGRAM (IDCV)  
MONTHLY STATUS REPORT  
NUMBER 3  
PERIOD JULY 1, 1983 THROUGH JULY 31, 1983

1.0 Introduction and Purpose

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

2.0 IDCV Program Status Summary

2.1 Programmatic Activities

Attachment 1 provides an updated chronology of major project milestones. The project chronology from inception through the beginning of this reporting period can be found in the second monthly status report. Several milestones warrant special highlight.

On July 15, 1983 Revision 3 of the Engineering Program Plan (EPP) and Revision 4 of the Project Quality Assurance Plan (PQAP) were issued for the use by TERA IDCV program personnel. These revisions reflect certain project organizational changes, improvements to administrative procedures and the issuance of two project instructions. In accordance with direction from Darl Hood, NRC Midland Project Manager, the transmittal of these revised documents to parties external

to the IDCV project team has been delayed pending a decision on any required revisions associated with the NRC's Ford Amendment activities. A public meeting is planned for August 26, 1983 at Bechtel's Ann Arbor, Michigan offices to discuss this issue as well as outstanding Open, Confirmed and Resolved Item Reports, Finding Reports and Finding Resolution Reports. The proposed agenda for this meeting is attached (Attachment 2).

On July 21-22, 1983, Mr. George Gower, NRC, I&E Headquarters visited the Midland site to observe TERA's ongoing construction verification activities. Mr. Gower's visit was associated with NRC's Ford Amendment activities. Lead TERA personnel provided a general orientation and introduction to the site efforts including discussions relative to the overall construction verification methodology. Mr. Gower also participated in system walkdowns. Plans were made for future observations at the site, at Bechtel's Ann Arbor, Michigan offices and at TERA's offices.

On July 22, 1983 TERA executed a contract with Law Engineering Testing Company to provide assistance in the areas of nondestructive examination and material testing. Law will participate in the documentation review process as well as the execution of a physical testing program. Upon definition of the testing program, documentation will be submitted. An affidavit of Corporate Independence is provided as an attachment along with individual affidavits for personnel recently added to the project team (Attachment 3). The resumes of these individuals will be submitted along with the revised PQAP.

On July 22, 1983 the NRC issued two letters. In a letter from T. Novak, NRC to J. Cook, CPC the NRC indicated their acceptance of the expanded, three-system Engineering Program Plan and the PQAP. In a letter to H. Levin, TERA and J. Cook, CPC from T. Novak the NRC provided clarification relative to interpretation of the Midland IDCV Protocol. The NRC staff indicated that they consider discussions of Confirmed Items to constitute substantive matters and that these discussions should be subject to the Protocol (i.e. noticed, with public observation permitted). Accordingly, the August 26, 1983 meeting will be noticed when logistics have been fully defined.

## 2.2 Design Verification Activities

### 2.2.1 Summary

While the AFW system review continued, there was a significant increase in the level of effort associated with the Standby Electric Power (SEP) and Control Room HVAC (CR-HVAC) system reviews during July. Criteria and commitments identified through reviews of the FSAR, B&W criteria documents, and other documentation were tabulated and development of consolidated criteria documents was initiated for the SEP and CR-HVAC reviews. The initial issue of the consolidated criteria and commitments list for the AFW system was distributed for internal review.

Engineering evaluations were initiated for various topics in the SEP and CR-HVAC review scopes. Progress on the completion of AFW engineering evaluations continued.

TERA personnel were in Ann Arbor July 25-29 to review documentation in Bechtel's offices and to identify documents for reproduction.

Reviews of additional documentation received as a result of Confirmed Items continued and allowed the resolution of one Confirmed Item. A previously Open Item was confirmed and one new item was confirmed during the reporting period. Two other Open Items, which were not previously confirmed, were resolved as a result of further reviews. The Confirmed and Resolved Items are discussed in Section 3.0 of this status report.

### 2.2.2 Auxiliary Feedwater System Progress

During the month of July, the draft final engineering evaluation for Topic 1.4-1, Technical Specifications, was completed and started through the internal review



process. Comments received during the internal review of the draft evaluation for Topic I.8-I, Overpressure Protection are being incorporated.

Engineering evaluations representing completion of review of certain topic aspects, were completed for the following topics:

<u>Topic Number</u>	<u>Title</u>
I.12-I	Cooling Requirements
I.13-I	Water Supplies
II.5-I	High Energy Line Breaks
II.6-I	Pipe Whip
II.7-I	Jet Impingement
II.13-I	Missile Protection

The criteria and commitments review for the environmental protection topic (II.8-I) continued along with related topics, environmental envelopes (II.9-I), equipment qualification (II.10-I) and HVAC (II.11-I). A single engineering evaluation of the criteria and commitments for these related topics is being performed. Three subsequent engineering evaluations will cover the implementing document, calculation, confirmatory calculation, and specification review scopes of review.

A major review effort completed in July by the electrical and systems technical reviewers involved an independent assessment of the design of the AFW System against potential single failures and an independent Failure Modes and Effects Analysis. The engineering evaluation for these topics, I.3-I and I.23-I, is being prepared at this time.

The initial issue of a consolidated set of AFW System criteria and commitments was issued in July for internal review and comment. This consolidated list contains criteria and commitments identified through the review of the FSAR, B&W BOP criteria documents, 10 CFR 50, and other design inputs. The

consolidated criteria list is used in subsequent stages of review as the basis against which implementing documents, calculations, and drawings are evaluated. As additional criteria and commitments reviews are completed, criteria will be added to the list as appropriate.

In order to further review the B&W/Balance of Plant interface, additional B&W BOP criteria documents were obtained at the end of July. The documents affect several topics in all disciplines, and also will have impact on the Control Room HVAC and Standby Electric Power reviews. Review of these documents will be initiated in August.

With regard to change in the status of IDV program Open, Confirmed, and Resolved Items, the following is provided:

<u>Items</u>	<u>Change/Discussion</u>
320I-008-C-011	The revised B&W BOP criteria document for the AFW system eliminated the requirement upon which this Confirmed Item was based and this item is now considered resolved.
320I-008-O-019	This item, regarding AFW system leak detection, has been resolved.
320I-008-O-022	After further review of the steam generator level control system, this item has been confirmed.
320I-008-O-023	This item, regarding steam generator level control, has been resolved.

Continuing review of environmental qualification documentation indicated a concern regarding classification of the blackout event as an initiating event for which certain AFW components should be qualified. OCR number 320I-008-C-048 has been written to document this Confirmed Item.

### 2.2.3 Standby Electric Power System Progress

The Standby Electric Power System design verification is progressing in the following major areas:

- Identification of criteria and commitments for all disciplines
- Identification, request, and receipt of relevant documentation
- Assembly of the pertinent regulatory requirements, industry codes and standards, and other design guidance

The FSAR is the principal source document for the identification of criteria and commitments. All applicable subsections are being reviewed to identify electrical, instrumentation and control, mechanical, and structural criteria. Chapter 8 of the FSAR contains the basic SEP system requirements and design bases, including conformance to certain regulatory guides, GDC's, BTP's, and IEEE standards. Other regulatory guide conformance is discussed in Appendix 3A and GDC compliance in Section 3.1. Associated I&C criteria are listed in Section 7.1.

Additional criteria documents include the B&W BOP interface criteria, the SRP, industry codes and standards, related licensing correspondence, and referenced design guidance. A consolidated criteria and commitments document is being prepared from these sources. The consolidated criteria and commitments document will also relate the identified criteria with the review topics identified in the Engineering Program Plan (PI-3201-009).

Much of the SEP system documentation has been identified, requested, and received, including:

- Plant single line diagram
- ESFAS schematic and logic
- Single Line Meter and Relay Diagram
- 120 VAC Single Line Diagram
- 125 VDC Single Line Diagram

- DG, 480V MCC, and Distribution Panel Schematics
- DG and 4KV Bus Logic Diagrams
- P&ID's (DG and Support Systems)
- Specifications (DG, etc.)

Additional documentation will be requested as it is identified during the course of the review, including:

- Class IE load lists
- DG load calculations and profile
- Battery calculations and profile
- Cable sizing calculations

The applicable versions of the referenced regulatory requirements and industry codes and standards are being assembled to be used in the consolidated criteria document and the evaluation of design criteria and commitments. Applicable design guidance documents will be requested when specifically referenced in an implementation document.

#### 2.2.4 Control Room HVAC Progress

The Control Room HVAC System is progressing in three major areas:

- Criteria identification for all disciplines and evaluation of mechanical and electrical criteria
- Piping and Instrument Diagram (P&ID) review
- Initial scoping review of mechanical calculations

The principal source document for identification of criteria is the FSAR. All applicable subsections have been reviewed to identify mechanical, electrical, and instrumentation and control criteria. The seismic analysis and design criteria for equipment and components have also been identified.

For those review topics where the criteria are determined to be the same for both the AFW and HVAC reviews, the AFW evaluations will be utilized. A tabulation of these topics has been prepared after review of the criteria

documents to identify any aspects unique to the Control Room HVAC. An assessment of the adequacy of criteria unique to the Control Room HVAC system is in progress. FSAR Appendix 3A Regulatory Guide positions have been assessed for the mechanical discipline topics. In parallel with the criteria assessment, an itemization of criteria and design bases was prepared utilizing the FSAR and P&ID. Engineering Evaluations for reviews of criteria and commitments are being prepared.

In particular, engineering evaluations in the following areas have been initiated:

- System Operating Limits
- Accident Analysis Considerations
- System Isolation/Interlocks
- Actuation Systems
- Filtration
- Pressurization
- Ventilation
- Seismic Design/Duct Support

The P&IDs for the Control Room HVAC system are utilized as implementing documents for mechanical design aspects. Additionally, they are a principal design control interface document between mechanical and instrument and control disciplines. Four aspects of the P&ID review have been completed:

- Review of seismic classification of HVAC and mechanical equipment and acceptability of non-seismic portions
- Equipment redundancy and capacity (compared to FSAR description)
- Selection of components for detailed review
- Identification of electrical, instrument, and control functional interfaces for all dampers

Additionally, a working list has been prepared of design aspects which are essential to the system function and which require confirmation from review of calculations and other documents.

The calculations for all mechanical aspects of the design have been examined to assess which calculations will be reviewed in detail. A list of calculation files of interest was prepared, and pertinent criteria, design bases, and design parameters specific to these calculations have been tabulated.

## 2.3 Construction Verification Activities

### 2.3.1 Summary

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

- The principal focus of TERA activities during this reporting period was upon the location and assimilation of construction/installation specifications, instructions, drawings and inspection report data. These activities were undertaken by TERA personnel at the Midland site. The documentation being collected pertains to selected components and commodities within the sample boundaries of the SEP, CR HVAC, and AFW systems. A review of the pertinent documentation against checklist requirements was initiated for selected components and commodities within the AFW system.
- On July 21 and 22, 1983, TERA personnel met with NRC's representative from the headquarters office of the Office of Inspection and Enforcement. The NRC's representative, Mr. G. Gower, met with TERA ICV personnel at the Midland site for the purpose of developing a detailed understanding of the specific activities being undertaken by TERA personnel in executing the construction verification methodology. The obtained information will be used by the NRC in their program to evaluate the adequacy and



efficacy of various third party design and construction verification programs (Ford Amendment). An overview of TERA activities to date was provided the NRC's representative in addition to activities projected for the month of August. Interviews were conducted by the NRC representative with available TERA personnel and a walkdown of the IDCv systems was provided.

- The review of supplier documentation for selected components within the CR HVAC and SEP systems was essentially completed during this reporting period. Approximately 2,000 documents were reviewed for applicability to vendor supplied components selected for ICV review. Tasks remaining pertain to the acquisition of selected and missing data necessary to complete the applicable check-off lists and the preparation of the engineering evaluation documenting the results of the supplier documentation review.
- Engineering evaluations documenting the reviews of the cable overinspection program and storage and maintenance program, pertinent to AFW system and components, were completed in draft form. The engineering evaluations are currently undergoing review by program management personnel to discern trends and/or conclusions which would necessarily be considered in altering the focus of similar reviews being conducted for the CR HVAC and SEP systems.

### 2.3.2 Construction Documentation Review Progress

Construction documentation review relates to those ICV review categories which are principally concerned with the adequacy and completeness of available documentation as opposed to those ICV review categories which verify physical configuration of installed components and commodities. The following ICV review categories are part of construction documentation review.

- Review of Supplier Documentation
- Review of Storage and Maintenance Documentation
- Review of Construcion/Installation Documentation

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

#### Review of Supplier Documentation

- ICV reviewers completed a detailed review of vendor-supplied documentation submitted by vendors for the thirty (30) components selected from within the CR HVAC and SEP systems sample boundaries.

This portion of the supplier documentation review involved indentifying specific vendor documentation submittals as applicable and adequate in satisfying documentation requirements which are stipulated in the body of applicable specifications and associated G-321-D forms. TERA personnel conducted this review in Bechtel-Ann Arbor offices during the first three weeks in July and involved the review of over 2,000 vendor-supplied documents to determine their applicability and adequacy in satisfying documentation requirements.

- During the week beginning July 18, 1983, TERA personnel identified, located and reviewed applicable receipt inspection and QA data packages for the selected vendor-supplied components within the CR HVAC and SEP systems. The majority of activities associated with this portion of the supplier documentation review was conducted at the Midland site with the review extending to the Bechtel-Ann Arbor offices for those data packages which had been forwarded to Bechtel-Ann Arbor for additional Bechtel review. With the exception of discrete gaps in data required to complete the applicable supplier-

documentation review checklists, the review of receipt inspection and vendor-supplied QA data packages is complete.

- Completion of the engineering evaluation for the supplier documentation review of AFW system components was intentionally postponed pending completion of the supplier documentation review of components within the SEP and CR HVAC systems. By incorporating the results of the supplier documentation review for CR HVAC and SEP components with the results of the review for AFW system components, a more comprehensive evaluation will result. Such a review will enable a more conclusive statement to be made as to the significance and repeatability of observed discrepancies.

#### Review of Storage and Maintenance Documentation

- The engineering evaluation associated with the review of storage and maintenance documentation for selected AFW system components was completed in draft form. As a result of the review and evaluation an OCR(C-47) was prepared to document a series of observed minor discrepancies. (See Section 3.0 of this Status Report.) The significance of any one of the noted discrepancies relative to its impact upon the operability of any one of the selected components is marginal; however, when considered as a whole, the discrepancies indicate a trend whereby a vendor's recommendations for storage and maintenance may not be consistently and accurately translated into the governing project storage and maintenance instructions.
- The completion of the storage and maintenance documentation review for selected components within the SEP and CR HVAC systems was projected for completion during this reporting period. As of the writing of this report, the review, collection, and assimilation of required data has not been completed. The storage

and maintenance documentation review for selected components within the SEP and CR HVAC systems is approximately 70% complete. Completion of the acquisition and review of necessary data is projected for August 19, 1983. The storage and maintenance review is being conducted at the Midland site.

#### Review of Construction/Installation Documentation

- TERA activities in the review of construction/installation documentation has been focused upon selected components and commodities within the AFW system, and, within the AFW system, further prioritized as follows:
  1. Pipe runs
  2. Piping hangers & supports
  3. Valves
  4. Rotating equipment
  5. Instrumentation
  6. Cable trays/conduit & supports
  7. Cable
  8. Civil/structural commodities
- To support the documentation review, TERA personnel have acquired approximately 100 instructions, specifications, procedures and drawings which are filed and retained in TERA's site office. Additionally, TERA's site office has been placed on controlled distribution for PQCI's and selected specifications and drawings.
- The documentation review of five selected piping runs, including hangers, supports, and welds, commenced during the reporting period. As of the writing of this report three of the selected piping runs have, with the exception of an NDE review, been completed. The review is discussed in the Engineering Program Plan and has necessitated the involvement of Law Engineering Testing Company specialists as follows:

- A welding engineer has reviewed applicable welding procedures (those procedures used for selected pipe and hanger welds) to discern the applicability and technical adequacy of the procedure and associated qualification records.
  - An NDE specialist will conduct a review of applied NDE testing methodology, procedures and recorded test data to discern the applicability and technical adequacy of the applied procedures and resultant test data. The NDE review is not complete and is scheduled for completion by August 19, 1983.
- A review of civil/structural related site activities commenced during the reporting period. Approximately 70 related specifications, procedures, instructions and drawings were required and are currently being reviewed. The intent of this review is to verify the application of applicable codes and standards and to ascertain the accurate and consistent translation of specification requirements into site instructions governing the civil/structural work. Additionally, testing requirements are being noted to verify their adequacy and appropriateness. This portion of the review is being conducted principally by Law Engineering Testing Company personnel in their Washington, D.C.-area offices. This specification/procedure review is anticipated for completion by August 15, 1983. The remaining tasks relate to the identification of specific placement numbers and subsequent review of supporting verification documentation for procured commodities (aggregate, cement, curing compound, rebar, etc.).
  - Based upon progress made during this reporting period, which was directly attributable to the cooperation of CPC and Bechtel site personnel, TERA anticipates completing the AFW system construction/installation documentation review during the first two weeks in September. This review category continues to receive the majority of the attention of ICV reviewers.

### 2.3.3 Physical Verification/Site Activities Progress

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

- Review of Selected Verification Activities
- Verification of Physical Configuration

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

#### Review of Selected Verification Activities

- Unlike other aspects of the ICV review, the review of selected verification activities involves to an equal measure the review of the processes employed as well as the final product of the process. This shift in emphasis is necessary to allow TERA to reach a conclusion as to the adequacy of selected overinspection programs and to allow extrapolation of the results of the system-specific reviews to the remainder of installed systems and components.

During this reporting period ICV reviewers completed the review of documentation governing the execution of PSDIV program. Two overinspections of hangers were observed by ICV reviewers. Current plans are to witness all of the types of hanger inspections to be performed by inspectors participating in the PSDIV program. Inspections relating to five hanger types remain to be witnessed by ICV reviewers. Large bore hanger inspections have tentatively been scheduled for TERA observation during the week of August 22.



- The engineering evaluation of the cable overinspection program for cables within the AFW system sample boundaries is complete in draft form. Supplemental information is being acquired to assist in defining more precisely the processes used to disposition discrepancies noted as a result of performing the cable overinspections.

#### Verification of Physical Configuration

- TERA's review of the processes used to control field modifications to piping and pipe hanger design is not complete. During the reporting period TERA received transmittals from Bechtel of current procedures and instructions which govern the field-change control process. These transmittals were received in a timely manner which would have enabled the completion of the review during this reporting period. Reviewers, however, were directed by IDCV management to focus their attention to the initiation and completion of the construction/installation documentation review, since the output of the documentation review is a necessary input to the physical configuration verification review. This direction was provided in anticipation of a commencement of CCP activities within the AFW system. TERA anticipates completion and documentation of the review of the field change control process by the middle of September.
- ICV reviewers initiated those activities necessary to identify, locate, and acquire documentation to support the physical verification of electrical terminations. Checklists to guide the electrical termination verification reviews were prepared and distributed for review and comment. During the second week in August ICV reviewers will ascertain the status of selected panels, control and load centers relative to CCP completion status. Assuming that selected components are complete relative to the CCP status, ICV reviewers plan to commence the physical verification of electrical terminations during the third week in August.

### 3.0 Summary of Confirmed and Resolved Item Reports, Finding Reports and Finding Resolution Reports

Attachment 4 provides TERA's Tracking System Summary for Open, Confirmed and Resolved (OCR) Item Reports, Finding Reports and Finding Resolution Reports. This tool assists TERA in tracking the disposition of issues as they progress through the review process. Items that have changed status or that have been added during the reporting period are noted with an asterisk. Attachment 5 provides re-typed copies of Resolved Item Reports that have closed out Confirmed Items, Finding Reports and Finding Resolution Reports. The following paragraphs discuss items which have changed status in the past month.

Two new confirmed items were identified in July. Confirmed Item C-047 is a summary of several minor discrepancies in the implementation of vendors' storage and maintenance recommendations. The overall item is concerned with an apparent lack of consistency in the translation of vendor storage and maintenance recommendations into project procedures.

Confirmed Item C-048 is concerned with the qualification of components for the station blackout event. Temperatures in the turbine-driven pump room are calculated to be in excess of 120° at the end of the two hour blackout period. The EQ report indicates that the room temperature is 104° under normal and accident conditions and implies that components in the room have not been qualified for the harsh environment.

Open Item O-022 was reclassified as a Confirmed Item. This item is concerned with the availability of documentation to demonstrate that the steam generator level control system will be stable and capable of controlling steam generator level and rate.

Items O-019 and O-023 were resolved as a result of the receipt and review of additional information.

Items C-045 and C-046 were reclassified as Findings following additional consideration of the items. They have been further classified as "non-safety" based upon the judged minor significance of the specific discrepancies noted; however, further analysis is continuing as part of the review of Confirmed Item C-047 to assess the potential safety significance of a trend detected as a result of the storage and maintenance review of selected AFW system components.

## ATTACHMENT I

### PROJECT CHRONOLOGY MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM TERA PROJECT 3201 PERIOD JULY 1, 1983 THROUGH JULY 31, 1983

<u>Date</u>	<u>Milestone</u>
June 26 - July 1, 1983 July 5 - July 11, 1983 July 18 - July 21, 1983	TERA Construction Review Team at Bechtel, Ann Arbor offices and on-site conducting supplier documentation review.
July 1 - July 29, 1983	TERA Construction Review Team on-site conducting construction/installation documentation review.
July 5 - July 8, 1983	Law Engineering and Testing Company Personnel on-site to initiate welding, NDE and concrete/structural portion of construction/installation documentation review. TERA construction review team on-site conducting storage and maintenance review.
July 18 - July 22, 1983	TERA construction review team on-site conducting storage and maintenance review and PSDIV program verification review.
July 21 - July 22, 1983	TERA construction review team meeting on-site with NRC IDCIV program reviewer.
July 22, 1983	NRC issues letter approving the Engineering Program Plan and Project Quality Assurance Plan for the full three-system IDCIV program.
July 22, 1983	General Services Agreement executed by TERA and Law Engineering Testing Company.
July 22, 1983	NRC issues letter of clarification on IDCIV program protocol.

## ATTACHMENT I

(Continued)

July 25 - July 29, 1983

TERA construction review team on-site conducting cable walkdowns and identification of applicable cable trays, conduit and supports. Law personnel on-site conducting review of applicable welding procedures and qual. records.

July 25-29, 1983

TERA IDV personnel at Bechtel's Ann Arbor offices obtaining and reviewing documentation for AFW, SEP, and CR-HVAC reviews.

## 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-011, 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, F-045	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



ATTACHMENT 3

AFFIDAVITS OF INDEPENDENCE

## STATEMENT OF CORPORATE INDEPENDENCE

AFFIDAVIT OF Thomas C Hunter Jr  
ON BEHALF OF LAW ENGINEERING  
TESTING COMPANY

My name is TC Hunter Jr. I am a A.V.P. of Law Engineering Testing Company. This statement is made on behalf of Law Engineering Testing Company (LAW).

Consumers Power Company (CPC) Contract No. CPI0-8782-Q, executed on November 18, 1982 with TERA Corporation specifies the criteria for corporate independence and individual independence of personnel assigned to work on the IDCV program. The specified independence criteria are set forth in a letter from Nunzio J. Palladino, Chairman, U.S. Nuclear Regulatory Commission (NRC), to the Honorable John D. Dingell, Chairman, Committee on Energy and Commerce, U.S. House of Representatives, dated February 1, 1982.

LAW has determined that the Company and individual members of the Company contracted to participate on the IDCV team satisfy the independence requirements of CPC Contract No. CPI0-8782-Q and, in particular, the following criteria:

1. LAW and individuals assigned to the Midland IDCV program do not have any direct previous involvement with the Midland activities that they will be reviewing.
2. LAW and individuals assigned to the Midland IDCV program have not been previously hired by Consumers Power Company, Bechtel, or Babcock and Wilcox to perform design, construction or quality work relative to the Midland activities that they will be reviewing.
3. LAW and individuals assigned to the Midland IDCV program have not been previously employed by Consumers Power Company.
4. The individuals assigned to work on the Midland IDCV program do not have present household members employed by Consumers Power Company.

5. The individuals assigned to work on the Midland IDCV program do not have any relatives employed by Consumer Power Company.
6. LAW and individuals assigned to work on the Midland IDCV program do not own or control significant amounts of Consumers Power Company stock.

Law Engineering Testing Company (LAW) has obtained affidavits for each individual currently assigned to the Midland IDCV program team. In the event that additional personnel are assigned to the team, LAW will obtain affidavits from these individuals as well.

Signed

Thama C. Nutter h.

Sworn and Subscribed Before me This 4 Day of <sup>Aug.</sup>~~June~~ 1983

Jimmie D. Jones  
Notary Public

My Commission Expires Feb 16, 1987


## STATEMENT OF INDEPENDENCE

AFFIDAVIT OF ROBERT A. RENEAU

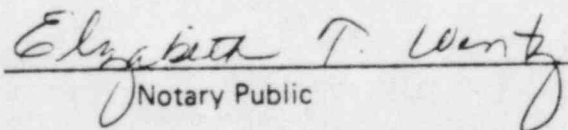
My name is Robert A. Reneau. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

  
ROBERT A. RENEAU

Sworn and Subscribed Before Me This 19<sup>th</sup> Day of July 1983

  
Notary Public

My Commission Expires 11-1-1985

## STATEMENT OF INDEPENDENCE

AFFIDAVIT OF EDWARD M. BECK

My name is Edward M. Beck. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed



EDWARD M. BECK

Sworn and Subscribed Before Me This 19th Day of July 1983



Notary Public

My Commission Expires 11-1-1985

# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF John R. Smith

My name is John R. Smith. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

John R. Smith

Sworn and Subscribed Before Me This 17<sup>th</sup> Day of July 1983

Jimmie D. Jones  
Notary Public

My Commission Expires Feb 16, 1987



# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF Paul J. Bruner, Jr.

My name is Paul J. Bruner, Jr. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

Paul J. Bruner, Jr.

Sworn and Subscribed Before Me This 14th Day of July 1983

Annice W. Jones  
Notary Public

My Commission Expires Feb 16, 1987

## STATEMENT OF INDEPENDENCE

AFFIDAVIT OF Richard H. Norris

My name is Richard H. Norris. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

Richard H. Norris

Sworn and Subscribed Before Me This 18 Day of July 1983

Arthur H. Harris  
Notary Public

Notary Public Georgia, State at Large  
My Commission Expires Nov. 16, 1985

My Commission Expires \_\_\_\_\_


# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF David Alan Rumrill

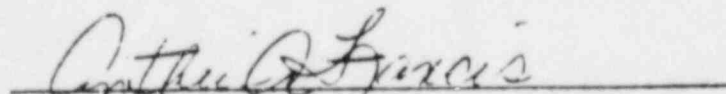
My name is David Alan Rumrill. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed



Sworn and Subscribed Before Me This 14th Day of July 1983

  
Notary Public

My Commission Expires NOTARY PUBLIC, GEORGIA, STATE JUDGE  
NOTARY PUBLIC, GEORGIA, STATE JUDGE  
My Commission Expires NOV 16, 1986

STATEMENT OF INDEPENDENCE

AFFIDAVIT OF David S. Pacacha

My name is DAVID S. PACACHA. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

David S. Pacacha

Sworn and Subscribed Before Me This 12<sup>th</sup> Day of July 1983

Mary M. Rushfor  
Notary Public

NOTARY PUBLIC STATE OF FLORIDA AT LARGE  
My Commission Expires MY COMMISSION EXPIRES 7-14-19  
BONDING INFO. GENERAL INFO. UNDERWRITING

# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF William Marcus Capps

My name is William Marcus Capps. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

William Marcus Capps

Sworn and Subscribed Before Me This 15<sup>th</sup> Day of July 1983

Dorothy H. Allen  
Notary Public

My Commission Expires 10-29-83

# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF Robert D. Phillips

My name is Robert D. Phillips. I am employed by Law Engineering Testing Company.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

Robert D. Phillips

Sworn and Subscribed Before Me This 15<sup>th</sup> Day of July 1983

Nancy St. Allen  
Notary Public

My Commission Expires 10-29-83



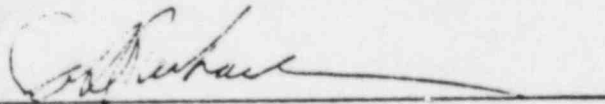
# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF JOHN D. RICHARDSON

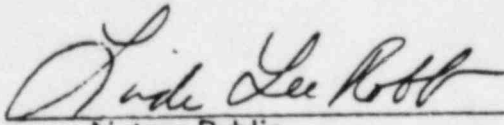
My name is John D. Richardson. I am employed by TERA Corporation.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

  
\_\_\_\_\_

Sworn and Subscribed Before Me This 11<sup>th</sup> <sup>AUGUST</sup> Day of ~~July~~ 1983

  
\_\_\_\_\_  
Notary Public

My Commission Expires My Commission Expires July 1, 1985

# STATEMENT OF INDEPENDENCE

AFFIDAVIT OF Gerald E. Setka

My name is GERALD E. SETKA. I am employed by TERA Corporation.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

Gerald E. Setka

Sworn and Subscribed Before Me This 13<sup>th</sup> Day of July 1983

Frances L. Johnson  
Notary Public

My Commission Expires 4-30-86



STATEMENT OF INDEPENDENCE

AFFIDAVIT OF James B. McIlvaine

My name is James B. McIlvaine I am employed by TERA Corporation.

I am currently assigned to the team which is conducting an independent design and construction verification at the Midland Nuclear Plant site. Prior to being given this assignment, I have never worked on any job or task associated with the Midland Project, or any job or task for or on behalf of Consumers Power Company, Bechtel, or the Babcock and Wilcox Company relating to issues that I am reviewing. I have never been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox Company. I do not own any shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock. Mutual fund or other funds in which I may have a beneficial interest, but over which I have no control, may own shares of Consumers Power Company, Bechtel, or Babcock and Wilcox stock, of which I am unaware. A list of such funds in which I have an interest are attached. I have no relatives which are or have been employed by Consumers Power Company, Bechtel, or Babcock and Wilcox.

Signed

James B. McIlvaine

Sworn and Subscribed Before Me This 7<sup>th</sup> Day of JUNE ~~MARCH~~ 1983

Linda Lee Robb  
Notary Public

My Commission Expires My Commission Expires July 1, 1985

\* Periods of Bechtel employment from June, 1972 through June 1975 and January, 1978 through July 1982. At no time did I work on the Midland project. James B. McIlvaine

# ATTACHMENT 4

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

7/15/83

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
001	RPS	12/21/83	3/4/83	3/4/83	7/12/83			I.4-I Tech Specs	
002	RPS	12/21/83	3/4/83	3/4/83	7/12/83			I.4-I Tech Specs	
003	RPS	1/3/83	3/4/83		3/4/83			I.8-I Overpressure Protection	
004	RPS	1/3/83	3/4/83		3/4/83			I.8-I Overpressure Protection	
005	RPS	1/4/83	3/4/83	3/4/83				I.1-I System Operating Limits	
006	RPS	1/12/83	3/4/83		3/4/83			I.2-I Accident Analysis Considerations	
007	RPS	1/12/83	3/4/83		3/4/83			I.2-I Accident Analysis Considerations	
008	LB	1/19/83	3/4/83		7/12/83			I.9-I Control Systems	
009	CS	1/20/83	3/4/83		3/4/83			II.1-I Seismic Design	
010	FAD	1/20/83	3/4/83	4/14/83	7/12/83			I.10-I Hydraulic Design	
011	LB	1/27/83	3/4/83	3/4/83	8/8/83			I.19-I Control Systems	*
012	LB	2/7/83	3/4/83	3/4/83		7/12/83		I.15-I Power Supplies	
013	RPS	2/8/83	3/4/83		7/12/83			I.5-I Syst. Align./Switchover	

\* Change in Status During Reporting Period

## (Continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
014	RPS	2/8/83	3/4/83		7/12/83			I.5-I Syst. Align./Switchover	
015	CS	2/10/83	3/4/83					III.1-I Seismic Design/Input to Equipment	
016	CS	2/10/83	3/4/83					III.5-I Civil/Stu Design Consid.	
017	FAD	2/17/83	3/4/83	3/4/83				I.11-I Heat Removal Cap	
								I.10-I Hydraulic Design	
018	FAD	2/17/83	3/4/83	3/4/83				I.11-I Heat Removal Cap.	
019	LB	2/21/83	3/4/83		8/8/83			I.18-I Instrumentation	*
020	FAD	2/24/83	3/4/83	3/4/83				I.11-I Heat Removal Cap.	
								I.9-I Comp. Func. Req.	
021	FAD	2/24/83	3/4/83					II.10-I Eq. Qual.	0-21, Rev. 1, 4/14/83
022	LB	2/24/83	3/4/83	8/8/83				I.19-I Control Syst.	*
023	LB	2/28/83	3/4/83		8/8/83			I.18-I Instrumentation	*
								I.19-I Control	

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

(Continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
024	RPS	3/1/83	3/4/83					I.2-I Acc. Anal. Consid.	
025	RPS	3/1/83	3/4/83	3/4/83				I.2-I Acc. Anal. Consid.	
026	RPS	3/1/83	3/4/83					I.8-I Overpress. Prot.	
027	FAD	3/1/83	3/4/83	3/4/83				I.9-I Comp. Func. Req. II.9-i Env. Eng.	
028	FAD	3/2/83	3/4/83	4/14/83				I.9-I Comp. Func. Req.	
029	LB	2/22/83	3/4/83		3/4/83			I.18-I Instrumentation I.19-I Control System	
030	LB	1/19/83	3/4/83		3/4/83			I.19-I Control System	
031	CS	2/11/83	3/4/83	3/4/83				I.3-Ic Pipe Supports	C-31, Rev. I, 7/12/83
032	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-32, Rev. I, 7/12/83



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

(Continued)

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
033	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-33, Rev. 1, 7/12/83
034	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-34, Rev. 1, 7/12/83
035	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	I.3-Ic Pipe Supports	C-35, Rev. 2, 7/12/83
036	CS	2/11/83	3/4/83	3/4/83		7/12/83		II.2-I Pressure Boundary	C-36, Rev. 2, 7/12/83
037	CS	1/20/83	3/4/83	3/4/83				III.1-I Seismic Design/Input to Equipment	
038	LB	3/1/83	3/4/83	3/4/83				I.15-I Power Supplies	
039	LB	3/30/83	4/14/83					II.10-I Env. Eq. Qual.	
040	LB	3/8/83	4/14/83					I.16-I Elec. Characteristics	
041	LB	3/25/83	4/14/83					I.15-I Power Supplies	
042	LB	3/31/83	4/14/83					I.10-I Env. Eq. Qual.	
043	FAD	3/15/83	4/14/83					I.10-I System Hydraulic Design	
044	FAD	3/15/83	4/14/83					II.10-I Env. Eq. Qual.	
045	DBT	3/17/83	4/14/83	5/25/83		8/8/83		II.1-IC Electrical Equipment/ Storage & Maintenance	C-45, Rev. 1, 7/12/83*
046	DBT	3/17/83	4/14/83	5/25/83		8/8/83		I.1-IC Mechanical Equipment/ Storage & Maintenance	*

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

<u>OCR No.</u>	<u>Resp. LTR</u>	<u>Potential Open Item</u>	<u>Open Item</u>	<u>Confirmed Item</u>	<u>Resolved Item</u>	<u>Finding Report</u>	<u>Finding Resolution Report</u>	<u>Topic</u>	<u>Comments</u>
047	DBT	7/7/83	7/26/83	8/8/83				I.1-1C Mechanical Equipment/ Storage & Maintenance	*
048	FAD	7/29/83	7/29/83	8/8/83				II.10-1 Environmental Equipment Qualification	*

ATTACHMENT 5

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

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

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

FILE NO. 3201-008  
DOC NO. 3201-008-R - 011  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. \_\_\_\_\_  
PRINCIPAL-IN-CHARGE \_\_\_\_\_ CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:  
AFW Feed only good generator (Fogg) Control

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
Topic 1.19-1, Control Systems

DESCRIPTION OF CONCERN:  
  
The B&W BOP Criteria document (36-1004477-01 Draft) section 3.12 required that control for FOGG be available at both the MCR and the Auxiliary Shutdown panel. The FOGG interlocks are controllable (invertable) from the MCR but are not controllable from the Auxiliary Shutdown panel.

SIGNIFICANCE OF CONCERN:  
  
B&W BOP Criteria regarding control of FOGG from Auxiliary Shutdown panel are not met.

RECOMMENDATION \_\_\_\_\_ OR RESOLUTION X \_\_\_\_\_:  
The revised B&W document 36-1003377-01 does not require that control for FOGG inversion be available at both the MCR and the auxiliary shutdown panel. The design requirements for remote shutdown mandate only the consideration of single failure or smoke in the control room. Present FOGG control design meets these requirements. Consideration of Abnormal Transient Operator Guidelines is outside the scope of the current review. Once CPCO and Bechtel approach to address ATOG is defined, the approach chosen should also be reviewed.

COMMENTS BY SRT (IF REQUIRED):

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

SIGNATURE(S):

LB  
OCR ITEM REPORT  
ORIGINATOR  
7/29/83  
DATE

LB  
LTR  
7/29/83  
DATE

HAL  
PROJECT MANAGER  
FOR PROJECT TEAM  
8/8/83  
DATE

JB  
PRINCIPAL-  
IN-CHARGE  
8/12/83  
DATE

SRT (IF REQUIRED)  
  
\_\_\_\_\_  
DATE

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

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

FILE NO. 3201-008  
DOC NO. 3201-008- R 019  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 7/30/83  
PRINCIPAL-IN-CHARGE 8/9/83 CPC/DESIGN ORG. \_\_\_\_\_

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

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
Topic 1.18-1, Instrumentation - Leak Detection

DESCRIPTION OF CONCERN:  
  
General Design Criterion 34 requires that the capability exists to detect, collect and control AFW system leakage and to isolate portions of the system in case of excessive leakage or component malfunctions.

SIGNIFICANCE OF CONCERN:  
  
The AFW system may not be capable of performing its intended function without adequate leak detection and isolation capability.

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

The water level in the AFW pump rooms is monitored by a redundant Class 1E system which alarms on high sump level to operator in control room. This system together with the AFW system valves meet the intent of GDC 34 as regarding capability to detect, collect and control AFW system leakage.

COMMENTS BY SRT (IF REQUIRED):

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

SIGNATURE(S):

LB  
OCR ITEM REPORT  
ORIGINATOR  
7/29/83  
DATE

LB  
LTR  
7/29/83  
DATE

HAL  
PROJECT MANAGER  
FOR PROJECT TEAM  
8/8/83  
DATE

JB  
PRINCIPAL-  
IN-CHARGE  
8/12/83  
DATE

SRT (IF REQUIRED)  
  
\_\_\_\_\_  
DATE

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

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

FILE NO. 3201-008  
DOC NO. 3201-008-R-023  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/29/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 7/30/83  
PRINCIPAL-IN-CHARGE 8/9/83 CPC/DESIGN ORG. \_\_\_\_\_

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

Steam Generator Level Measurement

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):

Topics 1.18-1 & 1.19-1; Instrumentation/Control

DESCRIPTION OF CONCERN:

During accident conditions (small break LOCA, main steam-line break or main feedline break) steam generator level measurement may not reflect actual level due to error in level measurement. The present level measurement system is not compensated for elevated temperature conditions inside containment due to accidents.

SIGNIFICANCE OF CONCERN:

Actual steam generator level may not be within required control range.

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

B/W calculation 32-1131293-02 has shown that S/G level setpoints, with some design changes, can be set within allowable ranges including the consideration of high containment temperature. In addition, insulation has been added to the level measurement reference leg to decrease the temperature effects. A reference leg temperature measurement device will also be installed to alert operator of erroneous level indication.

COMMENTS BY SRT (IF REQUIRED):

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

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

Available documentation of Control Loop Design is Instrument Loop Diagram & undocumented vendor test of control loop.

SIGNATURE(S):

LB  
OCR ITEM REPORT  
ORIGINATOR  
7/29/83  
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7/29/83  
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PROJECT MANAGER  
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**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT**

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

FILE NO. 3201-008  
DOC NO. 3201-008-C-022  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/29/83 SRT \_\_\_\_\_  
PRINCIPAL-IN-CHARGE 8/9/83

PROJECT TEAM/PROJECT MGR. 7/30/83  
CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:  
AFW Steam Generator Level Control

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
AFW Control Systems - Topic 1.19-1

**DESCRIPTION OF CONCERN:**

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

**SIGNIFICANCE OF CONCERN:**

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

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

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

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

Available documentation of Control Loop Design is Instrument Loop Diagram & undocumented vendor test of control loop.

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

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

FILE NO. 3201-008  
DOC NO. 3201-008-C-047  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/7/83 SRT \_\_\_\_\_ PROJECT TEAM/PROJECT MGR. 7/15/83  
PRINCIPAL-IN-CHARGE \_\_\_\_\_ CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:  
AFW System Valves (2LV3975AIV, 2 M03965AV), Instrumentation (2FT3969A),  
and Pump Room Cooler (2VM 54A)

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
Storage and Maintenance Documentation Review

DESCRIPTION OF CONCERN: Several instances were noted wherein the vendor's recommended storage and maintenance requirements were not reflected in the project procedures used to store and maintain received and installed equipment. For the selected components reviewed, the following discrepancies were noted.

1. The F-1 procedure governing warehouse storage for valve 2LV-3975AIV was for an air operated control valve. Valve 2LV-3975AIV is an electro-hydraulic control valve.
2. Manufacturer's recommended maintenance requirements contained in Bechtel Vendor Document #7220-M117-142-1 are not included in the project maintenance procedures for

SIGNIFICANCE OF CONCERN: valve 2M0-3965AV, Mfr's requirements not included as follows:  
(see attached sheet)

1. Lack of proper storage and routine maintenance on installed equipment could, over time, have a deleterious effect upon the operability and overall quality of equipment.

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

IDCV reviewers consider any one of the noted discrepancies as minor when evaluated by itself. However, when all noted discrepancies are considered as a whole, the trend would indicate an inconsistent process being used to translate vendor-specific storage & maintenance recommendations into project procedures.

1. Resolve noted discrepancies between vendor-recommended storage & maintenance requirements and requirements invoked through project procedures. In the process of reconciling the noted discrepancies, remain sensitized to differentiating between vendor requirements which are stipulated based upon warranty (commercial) considerations as opposed to those which are based upon industry accepted standards for adequate storage & maintenance.

COMMENTS BY SRT (IF REQUIRED):

2. Review process used to assign storage & maintenance requirements to received and installed equipment to verify consideration being afforded vendor-specific recommended requirements.

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.): FPG 4.000; FPG 5.000

- 2LV3975AIV: F-1-197; F-10-420
- 2M03965AV: F-1-396; F-10-92; 7220-M117-142
- 2VM54A: F-1-314; Zack MR-FP.2; 7220-M149-1
- 2FT3969A: F-1-632; F-10-403; 7220-5245-9 & 13

SIGNATURE(S):

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Description of Concern (Cont'd)

- Stroking of the valve every six months
  - Lubrication of the upper yoke sleeve and valve stem
3. Warehouse storage procedure (F-1 procedure) for flow transmitter 2FT-3969A did not contain the manufacturer's recommended storage requirements as follows:
- Monitoring of humidity indicators
  - Replacement of dessicant where necessary
4. The project storage procedure for the pump room cooler (2VM-54A) did not contain the manufacturer's recommended storage and maintenance requirements as follows:
- Dessicants placed in the cooler units
  - Megger tests to be conducted prior to issue from storage
5. OCR 3201-008-C/F-045 pertaining to the storage and maintenance of AFW Pump Motor 2P-005A.

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

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

FILE NO. 3201-008  
DOC NO. 3201-008-C . 048  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: LTR 7/29/83 SRT  
PRINCIPAL-IN-CHARGE 8/9/83

PROJECT TEAM/PROJECT MGR. 7/30/83  
CPC/DESIGN ORG. \_\_\_\_\_

STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:  
AFW System; turbine driven pump

IDCV PROGRAM AREA OR TASK (IF APPLICABLE):  
Equipment Qualification (Environmental) 11.10-1

DESCRIPTION OF CONCERN:  
AFW components located in the turbine-driven pump room have not been qualified to the harsh environment because they are isolated from breaks outside the room and because breaks within the room disable the pump because the suction pipe is broken. The EQ Report (Ref. 1) does not address the consequences of the blackout event. EQ Report Table 1-6 indicates that the maximum temperature in the room under normal and accident conditions is 104°F. Bechtel calculations (Ref. 2) indicate that the room temperature could exceed 120°F under the blackout event. Since the components in the room are required for the blackout event they should be qualified for the environment which results, but this design basis is not documented.

## SIGNIFICANCE OF CONCERN:

Under the station blackout event the turbine-driven pump subsystem must operate for 2 hours. If related components, such as turbine controls, are not qualified for the environment following a blackout, then the subsystem could fail to function properly. Under these conditions, the AFW system would fail to meet the design requirement that it function for 2 hours after the blackout event.

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

Process per PQAP.

COMMENTS BY SRT (IF REQUIRED):

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

1. Midland Environmental Qualification Report, Rev. 1, 12/82
2. Bechtel Calculation FM-4117-27(Q) (8/26/82)

## SIGNATURE(S):

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OCR ITEM REPORT  
ORIGINATOR  
7/29/83  
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**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
FINDING REPORT**

CLASS: SAFETY \_\_\_\_\_ NON-SAFETY   X  

FILE NO. 3201-008  
DOC NO. 3201-008-F - 045  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 7/22/83 PRINCIPAL-IN-CHARGE \_\_\_\_\_  
SRT \_\_\_\_\_ CPC/DESIGN ORG. \_\_\_\_\_

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

AFW System: AFW Pump Motor 2P005A

**DESCRIPTION OF FINDING:**

Bechtel procedure governing in-place maintenance deviates from the manufacturer's recommended storage instructions. Bechtel procedure requires motor shaft rotation every 30 days whereas manufacturer recommends shaft rotation every two weeks while motor is in storage.

**SIGNIFICANCE OF FINDING:**

Failure to comply with the manufacturer's recommended shaft rotation schedule for the motor may have a deleterious effect upon the shaft bearing surfaces, shaft bearings, and rotating elements of the motor.

**RECOMMENDATION:**

- Per discussions with Bechtel personnel during a meeting on 7/29/83 TERA was advised that the maintenance procedure governing in-place maintenance of motor 2P005A was in the process of being revised. TERA personnel to review the revised procedure.
- Determine plans for future inspection of the motors and motor bearing surfaces by qualified personnel (e.g., manufacturer's rep).

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

REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):  
OCR 3201-008-C-045 - Bechtel Storage Procedure F-10-247  
Vendor Document No. 7220-M14-68

**SIGNATURE(S):**

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ORIGINATOR (LTR)  
8/1/83  
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**MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION  
FINDING REPORT**

CLASS: SAFETY \_\_\_\_\_ NON-SAFETY X

FILE NO. 3201-008  
DOC NO. 3201-008-F-046  
REV. NO. \_\_\_\_\_

DATES REPORTED TO: PROJECT TEAM/PROJECT MGR. 7/22/83 PRINCIPAL-IN-CHARGE \_\_\_\_\_  
SRT \_\_\_\_\_ CPC/DESIGN ORG. \_\_\_\_\_

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

AFW System: Auxiliary Feedwater Pumps 2P005A & 2P005B

**DESCRIPTION OF FINDING:**

Review of documentation pertaining to storage and maintenance of subject pumps revealed.

- 1) Vacuum and humidity checks recommended by pump manufacturer are not included in Bechtel's storage and maintenance instructions.
- 2) Pumps have been opened, subject to flooding, and several NCR's generated to indicate maintenance problems which have not been addressed nor dispositioned.

**SIGNIFICANCE OF FINDING:**

The length of time the pumps (and turbine) have been in storage and the documented history of storage and maintenance deficiencies raise concerns as to the existence of internal damage to the pumps and turbine resulting from rust, corrosion, and foreign materials.

**RECOMMENDATION:**

Bechtel and CPCo recognize that problems exist concerning the storage and maintenance of the AFW pumps and turbine. Plans have been made for complete inspection by pump and turbine factor representatives.

- TERA to be notified when inspections are to take place so that ICV reviewers may witness inspection.
- Reconcile differences between manufacturer's recommended storage instructions and project storage and maintenance instructions.

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

**REFERENCES (INCL. RELATED OCR ITEM REPORT NO.):**  
OCR 3201-008-C046  
In-Place Maintenance Procedure F-10-118

Bingham Inst. Manual 7220-M14-69

**SIGNATURE(S):**

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FINDING REPORT  
ORIGINATOR (LTR)  
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