# MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM MONTHLY STATUS REPORT NUMBER 2 PERIOD MAY 28, 1983 THROUGH JUNE 30, 1983

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# MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM (IDCV) MONTHLY STATUS REPORT NUMBER 2 PERIOD MAY 28, 1983 THROUGH JUNE 30, 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-todate information relative to program progress and any important issues identified during the reporting period. This report covers the period from May 28, 1983 through June 30, 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 | provides an updated chronology of major project milestones. Several milestones warrant special highlight.

A meeting was held on June 3, 1983 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in the first IDCV Program Monthly Status Report. Attending this meeting were representatives of TERA, Bechtel, CPC and Babcock and Wilcox (B&W). The purpose of the discussions was to promote an understanding and any clarification necessary so that CPC, Bechtel or B&W could either identify information that may not have been available to the IDCV review team or clarify information that was available and reviewed. Minutes documenting discussions at this meeting were issued to participants on June 13, 1983 and are included herein as Attachment 2. The objectives of the meeting were met and the information gained or identified has led to further review and disposition of OCRs. Changes in status to OCRs and newly identified Findings are documented in the following sections of this report.

During an April 13, 1983 public meeting ct the NRC's Bethesda offices, the IDCV protocol for communications was discussed. This protocol is documented in a March 22, 1983 letter from J. Keppler, NRC to J. Cook, CPC. TERA indicated that "substantive" discussions would generally occur at the Findings stage of the IDCV process, at which time the opportunity for outside observation of meetings would be warranted in accordance with the IDCV protocol. On June 22, 1983, Darl Hood, NRC indicated that other meetings such as those associated with discussion of Confirmed Items should be subject to the IDCV protocol provisions and that a letter will be issued by the NRC documenting their position. Accordingly, TERA will notify the NRC Regional Administrator of future meetings of this nature.

Interfacing of Ford Amendment activities took place during the reporting period. On June 8, 1983, a meeting was held between TERA and representatives of the NRC I&E Headquarters staff to coordinate activities associated with the NRC's observation of TERA's IDCV review process. The NRC indicated that they plan to observe activities at Bechtel's Ann Arbor offices and at the Midland site. The emphasis of NRC's involvement is to study the efficacy of TERA's IDCV program methodology as well as other methodologies and report to Congress, recommending future initiatives to improve and verify the quality of plants under construction.

A meeting between TERA and CPC was held on June 22, 1983 at the Midland site to identify information that would be useful to TERA in proceeding with field verification activities and to clarify associated interfaces between the IDCV and the Construction Completion Program (CCP). It was concluded that TERA would remain abreast of CCP progress and schedule independent field verification activities after CPC has completed work in specific areas. During the reporting period, effort was devoted to the revision of the Engineering Program Plan (EPP) and the Project Quality Assurance Plan (PQAP). Revision 3 of the EPP and revision 4 of the PQAP are being issued on this date.

The changes reflect various improvements to administrative control procedures and the project organization.

## 2.2 Design Verification Activities

#### 2.2.1 Summary

During the month of June, design verification activity continued to focus on the AFW System. However, during the week of May 30, TERA's IDV team met with Bechtel personnel in Ann Arbor to identify documents applicable to the Standby Electric Power (SEP) and Control Room HVAC (CR-HVAC) systems. TERA obtained relevant design documents during those discussions and subsequently received more documents that had been requested. TERA personnel have initiated review of those documents and have begun preparation of design criteria and commitments checklists.

Confirmed Items resulting from the review of the AFW System were discussed at the June 3, 1983 meeting in Ann Arbor. The related meeting summary, which is attached, provides a synopsis of the discussion of each item, any information identified and as appropriate, the resulting action to be taken. A specific discussion of Confirmed Items for which the status has changed during the past month is included in Section 2.2.2 below.

The action items resulting from the June 3 meeting have, in some cases, meant an increase in the scope of TERA's review. For example, the IDCV team has identified that expanded review will be necessary in the areas of the station blackout event, the interface between seismic category 1 and non-category 1 piping, and the design interface between B&W and Bechtel.

### 2.2.2 Auxiliary Feedwater System Progress

The engineering evaluation for Topic I.8-I, Overpressure Protection, was completed during June. This evaluation included checking one Bechtel calculation and the performance of two independent calculations, the first pertaining to selected portions of AFW system piping and the second involving drain line piping for the AFW steam-driven turbine. The calculations and evaluation are presently being checked.

TERA was provided a copy of the latest (May 1983) revision to the B&W Balance of Plant Criteria Document. This revision, coupled with information gathered during the June 3 meeting regarding its development and usage, have resulted in the need to revise applicable in-progress engineering evaluations. These evaluations include those for System Operating Limits, Component Functional Requirements, System Hydraulic Design, and System Heat Removal Capability. Also, as noted in the Summary above, TERA has identified the need to increase the depth of review effort devoted to the interface between Bechtel and B&W. The more detailed review of this interface will begin in July.

Further progress in the mechanical review area included: (1) initiation of implementing document review for Water Supplies and Component Functional Requirements topics; (2) sample selection completion and checklist preparation initiation for Bechtel calculations to be reviewed for the System Hydraulic Design and System Heat Removal Capability topics, and; (3) completion of confirmatory calculations for the Environmental Envelopes topic.

In the AFW Electrical, Instrumentation and Control review area, substantial effort was expended during June in the review of information related to AFW system and subsystem control during normal and off-normal conditions. In addition, the following specific actions were taken: (I) in partnership with the systems lead technical reviewer, commenced a single failure review of the AFW system utilizing applicable P&ID's, electrical schematic diagrams, plant single-line drawings, and available documentation regarding power supplies; (2) developed ICV raceway input for on-site cable tray and conduit review; (3)

completed compilation of design criteria for applicable topics, and; (4) completed draft engineering evaluations for AFW topics Power Supplies, Electrical Characteristics, Protective Devices/Settings, Actuation Systems.

The following brief comments concern the specific Confirmed Items for which status changes were made by the IDV team during the month of June. These comments are in addition to those of the attached June 13 summary of the June 3 meeting.

- Confirmed Item C-001, concerning technical specification commitments, was resolved by reissuance as an Observation in accordance with Project Instruction 3201-005. This Observation, which combines Item 001 with an outstanding Open item regarding plant procedures, recognizes the draft nature of the specifications and procedures but recommends certain clarifications.
- Confirmed Item C-002, concerning technical specification requirements, has been resolved.
- Confirmed Item C-010, regarding the seismic design of the AFW System piping, has been resolved.
- Confirmed Item C-012, regarding power supplies to critical valve logic relays and their loss during station blackout conditions, has become a Finding.

2.2.3 Standby Electric Power System Progress

During the reporting period, the design verification program for the Standby Electric Power (SEP) System was initiated. Using the sample selection criteria in the EPP and discussions with Bechtel personnel, TERA identified and obtained relevant SEP documents. The design verification project team also initiated the identification of components which are to be the subject of reviews within the ICV. Specific progress in the IDV during the period primarily involved the review of design criteria and commitments activity on the review matrix for the SEP. To date, no open items have been identified. Implementing documents have been identified and requested for subsequent review.

#### 2.2.4 Control Room HVAC System Progress

The Engineering Program Plan for the Control Room HVAC Design Review includes 104 review activities as identified on the sample review matrix. To provide the project control for closure of all review activities, the review has been further defined in terms of work packages.

The criteria review and assembly of documentation was initiated in June. Meetings were conducted during the first week of June to identify the first set of additional documentation required for the system review. These document requests were based on the system information and criteria delineated in the FSAR, supplemented by the information from the drawings which had previously been transmitted. Industry codes, standards, and regulatory requirements and guidance for control room HVAC design and related design activities have been assembled and are being reviewed to establish a basis for determining the adequacy of the Midland criteria.

## 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.

A step increase in site activities on the part of ICV reviewers occurred on June 20, 1983, with the establishment of a TERA office at the Midland construction site. ICV personnel immediately commenced establishing lines of communications with CPCo and Bechtel site personnel who are cognizant of, and responsible for, the preparation and retention of selected procedures and verification documentation. The selected procedures and verification documentation are those which direct and record the results of the construction/installation process. ICV commenced identifying, collecting. and personnel assimilating required procedrues and documentation -with the emphasis of these activities being focused upon components and commodities within the AFW system sample boundaries.

- On June 30, 1983, TERA signed a letter of intent to contract with LAW Engineering Testing Company (LAW). LAW was selected by TERA to provide independent NDE/Materials Testing services and also to assist in the review of selected site and vendor generated welding, NDE, and material testing procedures and verification documentation. LAW personnel will commence documentation review activities early in the next reporting period - i.e., first week of July. The performance of NDE/Materials testing, to be performed as an integral part of the physical verification review, will commence once CCP status within each of three selected IDCV review systems has been determined (see next item).
- A meeting was held on June 22, 1983, at the Midland site between lead ICV reviewers and CPCo personnel. The purpose of the meeting was to identify information that would be useful to TERA in proceeding with field verification activities and to clarify the associated interfaces between ICV review activities and the CCP. The principal understanding developed as a result of the meeting was that ICV physical verification review activities will commence once the status of the CCP is determined to be complete for affected portions of the selected IDCV systems. All other ICV reviews - i.e., those reviews other than physical verification - may proceed unaffected by CCP status.
- Lead ICV personnel, in collaboration with the IDV LTR's, developed the listings of the specific components and commodities within the SEP and CR HVAC systems which will be subject to ICV review. For those vendor-supplied components appearing on the listings, ICV reviewers commenced an extensive review of supplier documentation as indexed and retained in the Bechtel - Ann Arbor offices. This review commenced June 13, 1983.
- ICV reviewers held detailed discussions with cognizant Bechtel engineering personnel concerning the processes and procedures used to control field modifications to pipe hanger and support drawings and the mechanism used to ensure that field modifications are factored into design calculations and the design finalization process. This effort was undertaken per direction established as a result of a meeting held in Bechtel offices between TERA, CPCo, and Bechtel personnel on June 3, 1983, to discuss confirmed items specifically OCRs C-31 through C-36 concerning AFW piping hangers and supports. The discussions, and subsequent TERA evaluation, have resulted in TERA's revising the affected OCRs to reflect actions undertaken by Bechtel to rectify noted discrepancies and the continuance of the review of existing processes and procedures used to control changes to pipe hanger design necessitated by the construction/installation process (see Section 3.0).

ICV reviewers completed their review of that portion of the cable overinspection program applicable to the AFW system and commenced their review of the Piping System Design and Implementation Verification (PSDIV) program. Observations were also made of certain aspects of the cable overinspection program which will be necessary to characterize the program's effectiveness. These observations have been recorded and will be combined with similar observations of the CR HVAC and SEP systems to enable ICV reviewers to extrapolate the evaluated results of the cable overinspection program to other 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 considered as part of construction documentation review.

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

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

## Review of Supplier Documentation

• Upon defining the specific components within the SEP and CR HVAC systems which will be subject to ICV review (see Section 2.3.1, Summary), ICV reviewers prepared the matrices which define the scope of supplier documentation review to be conducted for selected CR HVAC and SEP system components. The detailed review matrices were developed as a joint effort with IDV reviewers and serve to direct the activities of ICV reviewers performing the review of supplier documentation.

- A review of all specifications for selected SEP and CR HVAC components, with the exception of certain commodities, was conducted and completed. The purpose of this first review is to record all vendor documentation requirements noted in the body of the specifications and on the applicable G-321-D forms. The documentation requirements were extracted from the specifications and G-321-D forms and recorded on the applicable check-off sheets.
- A review of vendor-supplied documents which satisfy the recorded requirements for selected CR HVAC and SEP system components was initiated on June 20, 1983, by ICV reviewers working in the Bechtel Ann Arbor offices. It is anticipated that ICV reviewers will complete the majority of their activities in the Bechtel Ann Arbor offices during the first two weeks in July. Subsequent activities will be undertaken at the Midland site to identify and record vendor-supplied documentation forwarded and retained as part of the applicable QA data packages.
- With the exception of certain commodities, the review of supplier documentation for selected components within the AFW system is essentially complete. Remaining activities relate principally to ensuring the accuracy of recorded information and the gathering of discrete pieces of data necessary to complete the applicable check-off sheets. An engineering evaluation of the review of supplier documentation for selected AFW system components has been initiated with completion of the evaluation anticipated during the latter part of July or early part of August.

Review of Storage and Maintenance Documentation

- Specific components within the CR HVAC and SEP system sample boundaries have been selected and the review of storage and maintenance documentation for the selected components has been initiated. Activities undertaken during the reporting period relate principally to identifying and locating the applicable storage and maintenance records and the recording of required check-list data. It is anticipated that this review will be completed during the month of July.
- The engineering evaluation associated with the review of storage and maintenance documentation for selected AFW system components has been initiated and, as of the writing of this report, is approximately fifty percent complete.

## Review of Construction/Installation Documentation

- Specific components and commodities within the AFW, CR HVAC, and SEP systems sample boundaries have been identified and designated as being subject to this review category. ICV reviewers, in collaboration with the IDV reviewers, prepared the review matrices which list selected components and the detailed construction/installation documentation reviews to be conducted for the listed components.
- On-site activities commenced with the establishment of the TERA site office on June 20, 1983. ICV reviewers commenced the requisition and identification of required specifications, procedures and drawings which control and cause the recording of the construction/installation processes. Working relationships with cognizant and responsible CPCo and Bechtel personnel were initiated to ensure the efficient and reliable acquisition of needed information.
- Checklists were developed and are currently being reviewed for acceptability. These checklists guide and direct ICV reviewers in the acquisition of data and information from procedures, specifications, and associated documentation which control the constuction process and which control tests/inspections of installed commodities and components.
- The acquisition of data necessary to complete the applicable checklists was initiated. The focus of activities to date have been directed toward selected components and commodities within the AFW system sample boundaries.

## 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 ICV reviewers and include the following ICV 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, highlighted review categories are as follows:

## **Review of Selected Verification Activities**

- ICV reviewers completed their review of the cable overinspection program as the program is applicable to the AFW System. The following activities were undertaken and completed.
  - Documents (procedures, references, etc.) which control the cable overinspection program were obtained and reviewed and the applicable document control checklist was completed.
  - Selected personnel contributing to the program were interviewed, their qualifications and training verifed and the applicable training checklist completed. Two inspectors were observed during the cable inspection process.
  - Test equipment usage and control were verified and the applicable checklist completed.
  - The engineering evaluation of the cable overinspection program, as applicable to the AFW system, was initiated with completion of the evaluation projected for the middle of July.
- ICV reviewers commenced their review of the PSDIV program by establishing the necessary liaison with cognizant and responsible CPCo and Bechtel personnel. The following activities relating to the ICV review of the PSDIV program were undertaken during this reporting period.
  - Completed the collection and review of instructions and reference documents pertinent to the PSDIV program.
  - Completed the personnel qualifications and training checklist.
  - Completed the test and measuring equipment checklist.

- Witnessed inspection activities.
- ICV reviewers continue to monitor PSDIV program activities as these activities relate to selected hangers and supports in the AFW system sample boundaries.

#### Vertification of Physical Configuration

- As a result of the field measurement of selected pipe, hangers and supports within the "B" AFW train, ICV reviewers prepared OCR's identifying certain inconsistencies between design documents and the as-installed configuration. These OCR's were reported in the previous status report and were, among others, the subject of a meeting held in Bechtel offices on June 3, 1983, among CPCo, Bechtel, and TERA personnel. During this reporting period cognizant TERA and Bechtel personnel met for the purpose of more clearly defining the processes, past and present, used to control field modifications and design interfaces. TERA's review of these processes continues. An additional objective of the TERA - Bechtel meetings was to obtain the most current status of activities undertaken by Bechtel to rectify the noted discrepancies, since the measurements and documentation taken and used by TERA, upon which TERA's evaluation was based, were obtained in November of 1982, prior to the implementation of the CCP and PSDIV programs. The results of these meetings are reflected in revisions to OCRs C-31 thru C-36 and the preparation of Finding and Finding Resolution Reports contained in this status report (see Section 3.0).
- Based upon understandings developed as a result of a meeting on June 22, 1983, betwen CPCo and TERA personnel (see Section 2.3.1), ICV review of selected, installed components and commodities within the IDCV systems sample selection boundaries will commence once the status of the CCP is determined to be complete for the affected items. Given this understanding, ICV reviewers limited their activities to the selection of components and commodities which will be subject to a physical verification review and the preparation of checklists to be used in conducting the review. ICV reviewers continue to work with cognizant and responsible CPCo and Bechtel personnel for the purpose of identifying and statusing CCP progress.

## 3.0 <u>Summary of Confirmed and Resolved Item Reports</u>, Finding Reports and Finding Resolution Reports

Attachment 3 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 4 provides re-typed copies of Resolved Item Reports that have closed out Confirmed Items, Finding Reports and Finding Resolution Reports.

Confirmed Items C-012 and C-032 through C-036 have been re-classified as Findings. Finding Resolution Reports have been written for Findings F-032 through F-035 based upon on-going actions by CPC to correct the identified deficiencies.

Of the identified Findings, Finding F-012 is potentially the most significant. In the relatively unlikely event of a station blackout (loss of all ac power) the steam isolation values to the turbine driven AFW pump would close as a result of a loss of power to the FOGG relays which are not powered from a preferred power source. A loss of steam to the turbine prohibits the AFW system from providing feedwater flow until ac power is restored. The plant design criteria specify that the AFW system be operable for at least two hours under a station blackout event. CPC and Bechtel have acknowledged this condition and are in the process of taking remedial action. TERA will review CPC's plans for resolution when they are available.

Findings F-032 through F-035 relate to specific out of tolerance discrepancies associated with field measured piping and supports. These measurements were taken in late November, 1982 prior to the initiation of CPC's Construction Completion Program and Bechtel's Piping System Design and Installation Verification (PSDIV) Program. Integral to the CCP are programs which have been developed to identify and correct similar discrepancies. Future TERA field measurement activities will only proceed after the CCP has completed their activities in the area of interest. Finding Resolution Reports have been written for these Findings on the basis of specific CPC/Bechtel commitments to evaluate and correct these discrepancies and the existence of CPC/Bechtel programs addressing these issues. Two related reports, Confirmed Item Report C-031 and Finding F-036 remain active as they relate to issues associated with the field change/design interface control process. TERA is in the process of reviewing this process as a direct result of the above Findings. Future field verification work by TERA will be undertaken to verify the quality of additional installed piping and supports.

## PROJECT CHRONOLOGY

# MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM TERA PROJECT 3201 THROUGH 6/30/83

Date	Milestone
September 2, 1982	TERA proposal to CPC for Midland Independent Design Verification (IDV) Program
September 20, 1982	CPC letter of intent to use TERA for Midland IDV
September 24, 1982	TERA identification of IDV goals, objectives, system selection criteria, methodology, tasks, and schedule (outline presented to CPC on 9/28/82)
September 28, 1982	Meeting of CPC, TERA, and MAC in Jackson to develop submittal to NRC addressing IDV and INPO evaluation programs. TERA selects can- didate system for IDV program
September 30, 1982	TERA submittal of corporate Quality Assurance Plan to CPC for their review and acceptance
October 5, 1982	CPC submittal of Midland Independent Review Program to NRC
October 12, 1982	CPC approval of TERA corporate Quality Assurance Plan
October 25, 1982	Presentation on Midland IDV and INPO pro- grams to NRC at NRC's Bethesda offices
October 27, 1982	TERA conceptual development of IDV program modifications to further address the quality of construction (telecopy to CPC)
October 28, 1982	CPC decision to separate IDV and INPO evalu- ation programs

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Date	Milestone
November 2, 1982	Introductory meeting at the Midland site to initiate IDV and INPO programs
November 3, 1982	Midland site tour and walkdown of the AFW system
November 4, 1982	TERA project team meetings in Jackson to review Midland project experience (e.g., 50.55e reports, NRC inspection reports, etc.); identi- fication of information needs
November 5, 1982	Meeting of TERA, CPC and Bechtel manage- ment in Ann Arbor to discuss programmatic de- tails of the IDV program, logistics for TERA- Bechtel interaction on the IDV; review of Bechtel organization, interfaces, etc.; identi- fication of information needs
November 11, 1982	NRC issues meeting summary for October 25, 1982 meeting
November 15, 1982	TERA issues Revision 0 of the Midland In- dependent Design and Construction Verification (IDCV) Project Quality Assurance Plan
November 23, 1982	CPC approval of TERA Project Quality Assur- ance Plan
November 29, 1982	TERA issues draft Engineering Program Plan for interim use and comments
November 29 - December 3, 1982	TERA field verification team is on-site conduc- ting physical configuration verification of AFW system piping and supports inside containment
December 3, 1982	CPC submittal to NRC of response to NRC comments during October 25, 1982 meeting; CPC commits to separate IDV and INPO evalu- ation, identifies candidate systems for adding an additional system to the IDV scope, expansion of IDV program to include a verification of the quality of construction of the IDV systems; details of IDV interactions and INPO reporting

<u>Date</u>	Milestone
December 6, 1982	TERA project team meets individually with Bechtel group supervisors and group leaders to give a programmatic overview of the expanded IDCV; identify elements of the design process, interfaces, logistics for conducting the IDCV review; identify information, etc.
December 8-15, 1982	Lead technical reviewers interview Bechtel personnel as part of the IDCV review process; identification of information needs
December 10, 1982	Agreement reached with Bechtel on proprietary information
December 16, 1982	TERA completes Engineering Program Plan
January 17-21, 1983	TERA design review team in Ann Arbor
January 24, 1983	TERA begins ICV program review of supplier documentation, storage, and maintenance docu- mentation
January 24-26, 1983	TERA construction review team on-site review- ing supplier documentation and storage and maintenance documentation
January 25-27, 1983	TERA design review team in Ann Arbor
February 7-11, 1983	TERA construction review team on-site
February 8, 1983	Public meeting on Midland Construction Com- pletion Program and Independent Design and Construction Verification Program
February 9, 1983	TERA transmits Engineering Program Plan (EPP) and Project Quality Assurance Plan (PQAP) to the NRC
February 17, 1983	TERA issues Revision 1 of the EPP and Revision 2 of PQAP

Date	Milestone
February 28 - March 4, 1983	TERA construction review team on-site and design review team at Ann Arbor
February 28, 1983	TERA meeting with B&W in Lynchburg
March 1, 1983	TERA meets with Bechtel management in Ann Arbor to clarify requests for information
March 2, 1983	Project team meeting, Ann Arbor
March 11, 1983	Project quality assurance audit conducted by the Project Quality Assurance Engineer
March 18, 1983	TERA transmits information to NRC regarding corporate and individual independence, profes- sional qualifications, scope of review, reporting and auditability, and program status
March 21-25, 1983	TERA construction review team on-site and TERA design review team at Ann Arbor
March 22, 1983	NRC selects Standby Electric Power System as the second system and the HVAC system assur- ing control room habitability as the third system for the IDCV program
March 24, 1983	NRC provides TERA with a service list for Midland IDCV program
March 28, 1983	NRC issues the protocol for the Midland IDCV program
March 30, 1983	TERA transmits supplemental information to NRC regarding affidavits of independence and professional qualifications, including additional affidavits by individuals previously employed by NRC

Date	Milestone
April 8, 1983	Project quality assurance audit report issued by the Project Quality Assurance Engineer
April 9, 1983	Senior Review Team meets to review project status, review OCRs, and develop recommenda- tions for the project team
April 13, 1983	Meeting at NRC, Bethesda, including TERA, CPC, GAP, and NRC. TERA presents synopsis of progress to date of AFW system review, plus discussion of topics to be reviewed for the two additional systems (Standby Electric Power; Control Room HVAC) selected by NRC. All parties discuss protocol for Midland IDCV Pro- gram
April 21, 1983	TERA transmits supplemental information to NRC regarding affidavits of independence for individuals previously employed by NRC
May 3, 1983	NRC letter, Novak to Cook (CPC) stating acceptance of TERA Corporation to conduct IDCV Program and acceptance of Engineering Program Plan for the Auxiliary Feedwater System
May 18, 1983	TERA issues general Revision 2 of the EPP and Revision 3 of the PQAP to incorporate the addition of the Standby Electric Power System and Control Room HVAC System to the IDCV scope, update personnel qualifications, add project instructions and reference new protocol for communications
May 18, 1983	TERA meets with NRC, I&E HQ management to discuss consideration of the Midland IDCV program within NRC's response to the Ford Amendment legislation.
May 27, 1983	TERA issues first Monthly Status Report.

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Date	Milestone
May 31 - June I, 1983	TERA construction review team on-site.
May 31 - June 3, 1983	TERA construction and design review teams at Bechtel's Ann Arbor offices.
June 3, 1983	Meeting at Bechtel's Ann Arbor offices to discuss Confirmed Items documented in the first Monthly Status Report dated May 27, 1983.
June 6-9, 1983	TERA construction review team on-site.
June 8, 1983	Meeting with NRC I&E Headquarters staff at TERA's Bethesda offices to coordinate Ford Amendment activities.
June 13, 1983	Meeting minutes issued documenting discussions during the 6/3/83 meeting on Confirmed Items.
June 13-17, 1983 and June 20-24, 1983	TERA construction review teams on-site and at Bechtel's Ann Arbor offices.
June 22, 1983	Meeting between TERA and CPC at the Midland site to identify information that would be useful to TERA in proceeding with field verification activities and to clarify associated interfaces between the IDCV and CCP.
June 22, 1983	Meeting with NRC, NRR and I&E staff at TERA's Bethesda offices. NRC observation of the IDCV filing system and review of selected documents.
June 27, 1983	Senior Review Team meets to review project status, review OCRs and Findings and develop recommendations for the project team with emphasis in the area of root cause determination.
June 27 - July 1, 1983	TERA construction review team at Bechtel's Ann Arbor offices.
June 30, 1983	TERA forwards letter of intent to use Law Engineering Testing Company professional services in support of IDCV activities related to NDE, welding and materials testing/evaluation.



# MEMORANDUM

to Distribution

DATE June 13, 1983

FROM: H. Levin, Project Manager, MM Midland IDCV Program

COPIES TO:

SUBJECT Meeting Minutes - First Meeting on Confirmed Items, June 3, 1983

A meeting summary for the first meeting on Confirmed Items for the Midland IDCV Program is attached for your information.

Attachment

Distribution:

File 3201-007 File 3201-010 D.F. Lewis, Bechtel T.E. Johnson, Bechtel S. Rao, Bechtel D.S. Riat, Bechtel G. Borsteins, Bechtel Mark Mau, Bechtel Frank Levandoski, B&W Lin el Bates, TERA Martin Jones, TERA R.P. Snaider, TERA G. Eagle, CPC J. Knight, CPC W. Neilson, Bechtel J. Beck, TERA D. Davis, TERA R. Wilson, TERA R. Cleland, TERA M. Polit, TERA

J.A. Clements, Bechtel E.H. Smith, Bechtel Patrick Corcoran, Bechtel S.L. Sobkowski, Bechtel R. Tulloch, Bechtel R.C. Hollar, Bechtel Dennis Kelly, Bechtel Donald Tulodieski, TERA Jim Agar, B&W Robert Snyder, TERA F.A. Dougherty, TERA H.A. Levin, TERA L. Gibson, CPC T. Ballweg, Bechtel E.M. Hughes, Bechtel D.D. Simpson, Bechtel J. Martore, TERA D. Witt, TERA F. Pellerin, TERA W. Hall, U of I

HAL/djb

# SUMMARY OF FIRST MEETING ON CONFIRMED ITEMS JUNE 3, 1983 MIDLAND IDCV PROGRAM

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A meeting was held on June 3, 1983 at Bechtel's Ann Arbor, Michigan offices to obtain additional information related to Confirmed Items identified in the first IDCV Monthly Status Report, dated May 27, 1983. Attachment I identifies the participants of the meeting which included representatives from TERA, CPC, Bechtel and B&W. Attachment 2 presents the agenda for the meeting.

The meeting was opened by Jerry Clements, Bechtel with an introduction of participants. Lou Gibson, CPC provided a statement of the purpose of the meeting and more generally the IDCV program. Howard Levin, TERA followed with a discussion of important features and objectives of an "IDV type" review, a summary of the status of the IDCV program to date as documented in the first Monthly Status Report and a presentation of details related to the IDCV program reporting process as shown in Attachment 3. The discussion on the reporting process focused on a definition of the various types of reports to be generated within the IDCV program and the circumstances under which these reports are generated.

Lead TERA personnel then led a discussion of Confirmed Items identified in the AFW system review. The purpose of the discussion was to promote an understanding and any clarification necessary so that CPC, Bechtel or B&W could either identify information that may not have been available to the IDCV review team or clarify information that was available and reviewed. The Confirmed Items were discussed in the order shown on the attached agenda. CPC, Bechtel and B&W personnel generally participated in discussions of Confirmed Items by discipline, consistent with the responsibilities shown on the agenda. The following description, by Confirmed Item, highlights important issues discussed and any course of action identified during the meeting.

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## 3201-008-C-037

Discussion: Bechtel pointed out that Revision 47 of the FSAR put the subject figures in congruence with the descriptive portion of the FSAR. They indicated that the delay was caused by an effort to catch-up resulting from the massiveness of the FSAR revision process associated with soil-related activities. The civil discipline indicated that project specs serve as their design input versus the FSAR and therefore there is no impact due to the delay. TERA asked whether there could be a potential impact in other disciplines where the FSAR serves as the primary design input document. Bechtel replied that the responsibility for FSAR revisions rests with the group supervisors who keep their personnel informed of changes. They also pointed out that the SAR Change Notice was an important milestone that keyed attention to these issues.

Action: The status of the item will remain unchanged subject to TERA's review of the SAR Change process. TERA indicated that specific changes would be tracked to verify the adequacy of the process.

#### 3201-008-C-011

Discussion: CPC pointed out that the auxiliary shutdown panel did not serve an emergency function and therefore FOGG override control was not provided at this location. TERA asked B&W to describe their rationale for the BOP criteria document (section 3.12) specifying FOGG override control at both the main control and auxiliary shutdown panels. B&W pointed out that certain BOP criteria document information is considered critical from an interface standpoint and should be treated as a specific design requirement to permit interface compatibility between the NSSS and BOP as opposed to general design criteria. This information is identified by a double asterisk and B&W must concur in deviations. TERA had reviewed a draft of Revision I of the BOP criteria document, dated June 25, 1982 which did not include the double asterisk notation. The final version of Revision I was approved on May 3I, 1983. The first BOP criteria document (Revision 0) was issued in 1978. Prior to this time, criteria were identified in design or guide specs. CPC indicated that they are contemplating revision of the FOGG logic to improve certain human factors considerations.

Action: The status of the item will remain unchanged pending further review. TERA will review issues related to the B&W deviation concurrence process for this specific issue and the rationale for deviation from a double asterisk item. TERA will review the BOP/NSSS interface in greater detail with particular emphasis on the period prior to 1978 (guide specs) and operability of the "double asterisk system" thereafter. TERA will factor CPC's revised FOGG thinking into the IDCV design review process including a review of the ATOG document.

#### 3201-008-C-012

Discussion: Bechtel indicated that their preliminary evaluation verified TERA's conclusion that during a loss of all AC power, the power to the FOGG interlock relays for channels AA and BA would be cut, causing valves 2MO-3277A and B to shut, cutting off steam to the AFW turbine.

Action: Subject to any further clarification received from Bechtel as part of their final evaluation, TERA will process the item in accordance with Project Instruction PI-3201-008 and issue a Finding. TERA will factor this information into the IDCV review of Topics 1.23-1, -2 and -3, FMEA and consider enlarging the sample size to verify that this issue is not a systematic problem.

## 3201-008-C-025

Discussion: CPC pointed out that a steam generator tube rupture is a limiting fault versus the more probable leaking scenario. Bechtel indicated that they had determined through discussions with the manufacturer that the Terry turbine would run on water and not be damaged under such conditions. The scenario was identified as being controlled by timing and the ability of the operator to identify the event and take appropriate action. TERA questioned the bases for the FSAR conclusion that the operator would override FOGG in time.

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Action: The status of the issue will remain unchanged pending further review. TERA will review information supporting the FSAR conclusion relative to operator action. TERA will review the Terry tests supporting operation when subjected to water.

## 3201-008-C-038

Discussion: Bechtel indicated that the minimum flow scenario would be about 100 gpm. Under this condition, Bechtel determined that damage would not occur to the pump during the 2-hour period of service that may be required. They received a telex from the manufacturer attesting to this assertion.

Action: The status of the issue will remain unchanged pending further review. TERA will review Bechtel's 100 gpm minimum flow calculation and the pump manufacturer's minimum flow evaluation or test data supporting the pumps performance under this condition.

## 3201-008-C-005

Discussion: TERA pointed out that this item was a "process" oriented OCR that served as an umbrella to identify a more generic issue that has arisen as a direct result of several specific OCRs (i.e. C-017, -018, -020, -027 and -028).

Action: The status of this issue will remain unchanged pending further review of Confirmed Items C-017, -018, -020, -027 and -028. CPC/Bechtel/B&W will provide clarification resolving potentially conflicting data relative to AFW system design parameters.

### 3201-008-C-018

Discussion: B&W indicated that they originally utilized a proprietary decay heat curve that is less conservative than the ANS 5.1 curve, assuming required AFW flow at 30 sec.; however, 40 sec. is the earliest that required AFW is available. CPC indicated that it was their intent to meet the BTP APCSB 9.2 position which requires approximately a 20% margin over the ANS 5.1 curve. B&W stated that 1035 gpm AFW flow was required to meet 1.2 times ANS 5.1 at 40 sec. at a 2552 Mw ultimate power level plus 16 Mw for the RCPs. They also indicated that the 850 gpm design flow would be adequate for 1.0 times ANS at 40 sec. at 2552 Mw plus 16 Mw level. TERA pointed out that the BOP criteria document is unclear relative to the required time for AFW in that 30 sec. and 40 sec. are both specified. Also, TERA indicated that the acceptability of AFW sizing was contingent upon the power level specified (i.e. 2452 Mw (license), 2552 (ultimate) or 1.02 times these values to account for instrument drift). B&W agreed with TERA's C-018 write-up that statements in the FSAR relative to the use and application of decay heat curves were conflicting.

Action: The status of this issue will remain unchanged pending further review. TERA will review the rationale for criteria related to decay heat removal capability with emphasis on performance criteria necessary for maintaining primary pressure within required limits. In conjunction with the review of other Confirmed Items associated with the specification of AFW system parameters (e.g. power level, margin for instrument error, timing, etc.), TERA will conduct another independent analysis to verify AFW system flow capacity utilizing appropriate parameters. Bechtel/CPC will review the FSAR to determine the need to correct conflicting information.

### 3201-008-C-20

Discussion: Bechtel indicated that the 108°F service water temperature was a conservative value used in the stress analysis calcs and not an expected temperature at the point where AFW is required in response to a transient. The 105°F service water temperature was based upon a calculation which conservatively modeled the cooling pond during a LOCA for purposes of determining the maximum service water temperature. Bechtel indicated that the 90°F was a reasonable design temperature for evaluating AFW in consideration of the timing of demands on AFW and the expected temperatures of the cooling pond and condensate storage tank.

Action: The status of this issue remains unchanged pending TERA's review of Bechtel's evaluation supporting the 90°F criteria.

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#### 3201-008-C-027

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Discussion: CPC indicated that the design basis or licensed power level (2452 Mw) of the plant represents their licensing basis and commitment relative to safety analyses. They have exercised the option of conducting various analyses such as dose calcs assuming higher power levels for conservatism and to avoid future work by conducting bounding evaluations.

Action: The status of this issue remains unchanged pending TERA's review of the Bechtel/CPC/B&W bases for the specification of various other AFW system parameters in conjunction with the review of other Confirmed Items (i.e. C-005, -017, -018, -020, -028). Bechtel/CPC will review FSAR App. 3A and IOA for consistency and clarity.

### 3201-008-C-028

Discussion: B&W indicated that their stress analyses were based upon a 40°F AFW inlet temperature. The normal line-up to the CST assures meeting this criterion since the CST is heated to maintain at least 40°F. B&W and CPC maintain that in the unlikely event that AFW draws service water at temperatures between 32° and 40°F, an evaluation would follow. Notwithstanding this, B&W asserts that the fatigue usage factor associated with a one time occurrence of this nature would not invalidate the plant design.

Action: This status of this issue remains unchanged pending TERA's review of the bases for the specification of other AFW system parameters in conjunction with other Confirmed Items (i.e. C-005, -017, -018, -020, -027).

## 3201-008-C-010

Discussion: Bechtel indicated that certain segments of non-Category I pipe had been seismically evaluated. There are three categories of Items: I. S-I: seismic, Q-listed, full QA; 2. seismic designed and supported; 3. non-seismic. The portion of pipe in question was seismically designed; however, without ASME III certification. The systems interaction review for seismic II/I identified lines in category 2; however, these are not identified on P&IDs.

Action: This specific item is resolved. TERA will review the bases for the seismic/non-seismic interface considerations and classification as part of other topics within the IDCV program.

## 3201-008-C-001

Discussion: CPC indicated that independent valve line-up verification is accomplished after maintenance by a signoffs of the responsible maintenance personnel prior to return and by logging in the control room in accordance with the tech specs.

Action: The status of this issue is unchanged pending TERA's review of the tech spec language to verify clear specification of verification of line-up subsequent to maintenance.

## 3201-008-C-002

Discussion: CPC indicated that the Midland tech specs are consistent with the B&W Standard Tech Specs as applied to a 2 pump plant.

Action: The status of this issue is unchanged pending TERA's review of the tech spec language to verify clear specification of action requirements if both trains of AFW are inoperable.

#### 3201-008-C-036

Discussion: Bechtel conceded that offset dimensions to the reactor building centerline may be off because these drawing dimensions are not always corrected as part of the Field Change Request process; however, these dimensions are not very important after the line is originally located. Bechtel stated that placement tolerance is plus or minus 2 inches in any direction. Action: This issue will be considered for re-classification as a Finding. TERA will conduct further review to verify the frequency of drawing errors of this type and determine the impact.

## 3201-008-C-035

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Discussion: Bechtel indicated that they had revised hanger iso H-639 sh. 14(Q), rev. 11 on May 26, 1983 reflecting the as-built dimensions and that the stress group had re-evaluated the line. TERA indicated that they had secured red lines from Bechtel (Zenovy) at the site. Bechtel and TERA were unable to reach full agreement on all dimensions.

Action: The status of the issue remains unchanged pending TERA's review of Bechtel's latest information which was unavailable to TERA. TERA will review the red-line and FCR process to verify that it was operable. TERA will continue a review and resolution of the field data collected in November 1982 against Bechtel information available then and now.

## 3201-008-C-032, -033, -031

Discussion: Bechtel discussed the FCR process and indicated that they had instituted a new program, the PSDIVP (Piping System Design and Installation Verification Program) which would apply to all Q piping and supports, superceding the red-line process. Specific agreement was not reached on the deviations noted on these Confirmed Items.

Action: The status of these items remains unchanged pending TERA's review of the chronology of various primary verification programs and a determination of a course of action necessary for TERA's verification that the process (new and/or old) is operable. A review of the appropriate process will be undertaken along with specific closeout of these Confirmed Items.

## 3201-008-C-045

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Discussion: TERA indicated that C-045 should be revised reflecting a 30 day shaft rotation period rather than a 90 day period. TERA provided clarification that maintenance activities had taken place; however, Bechtel's procedures were in conflict with the manufacturer's recommendation.

Action: The status of the issue will remain unchanged pending the identification and review of any generic superceeding guidance that may justify a relaxation of requirements.

#### 3201-008-C-046

Discussion: TERA provided details related to the Confirmed Item and clarification of the concern.

Action: The status of the issue will remain unchanged pending TERA's observation of the pump and turbine disassembly and inspection and review of results.

IDCV Meeting - 6/3/83 List of attendees NAME COMPANY NAME COMPANY J.a. Clemento Buttel M. Hughes Zettel E. H. Smith Bechtel Lewis F BECHTEL P PATRICK CARCIRM BILHTEL D.D. Simpson BECHTEL T.E. JOHNON BECHTEL Becktel S.L. Sobkowski 5 RAO BECHTEL R. TULLOCH BECLICL R.C. HOLLAR Benthel. Bachtel G. Borsteins Bechtel Dan's Lack BECHTEL MARK MAU RECHTEL DONALD IULODIESKI TERA FARK LEVANDOSK. BW Jim Agar BEW Liggel, Bates TERA Curt C. Ingdes TERA MARTIN VONES TERA F.A. Dougherty TERA R. P. SNAIDER TERA H.A. LEVIN) TEFA E. MELE CPC L. EIBSON J. KNIGHT 1.1 T. BALLWELT D LL. NIEZSUN

## IDCV MEETING

## Friday, June 3, 1983 Conference Room 5D5

# Initial Discussion on Results of Review of AFWS

#### AGENDA

I. Summary review of status of IDCV for AFW system.

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II.

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Review/discussion of confirmed items:

		Responsibl	e Party	
NO.	Subject	Bechtel	B&W	CPCo
37	Seismic Design Criteria	Civil		
11	Control for FOGG	CS	x	
12	Power Supply - FOGG	CS/E		
2.5	Accident Analysis - FOGG	CS/M		
38	Power Supply - Min. Flow	M/F		
5	System Operating Limits	M	v	
17	Heat Removal Capability		v	
18	Heat Removal Capability		v	
20	Heat Removal Capability	м	A V	
27	Power Level for AFW Anal.	**	A V	
28	Min. Temp. for AFW Anal.	м	X	
10	Water Volume in AFW Pines	M	X	
1	Technical Specifications	M		
2	Technical Specifications	M		X
31	Physical Config Supports	m DD/Carat		X
32	Physical Config - Supports	PD/Const.		
33	Physical Config - Supports	PD/Const.		
34	Physical Config - Supports	PD/Const.		
35	Physical Config - Supports	PD/Const.		
36	Physcial Config Bipports	PD/Const.		
45	Storage & Maintenance	PD/Const.		
46	Storage & Maintenance	Constr. Constr.		

III.

Establish plan, format and schedule for responding to the confirmed items.

B/CPCo/B&W/TERA



REPORT FLOW CHART MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

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## OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM

## MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

## 7/15/83

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved	Finding Report	Finding Resolution Report	Topic		Comments
001	RPS	12/21/83	3/4/83	3/4/83	7/12/83			1.4-1	Tech Specs	•
002	RPS	12/21/83	3/4/83	3/4/83	7/12/83			1.4-1	Tech Specs	•
003	RPS	1/3/83	3/4/83		3/4/83			1.8-1	Overpressure Protection	
004	RPS	1/3/83	3/4/83		3/4/83			1.8-1	Overpressure Protection	
005	RPS	1/4/83	3/4/83	3/4/83				1,1-1	System Operating Limits	
006	RPS	1/12/83	3/4/83		3/4/83			1.2-1	Accident Analysis Considerations	
007	RPS	1/12/83	3/4/83		3/4/83			1.2-1	Accident Analysis Considerations	
008	LB	1/19/83	3/4/83		7/12/83			1.19-1	Control Systems	•
009	CS	1/20/83	3/4/83		3/4/83			11.1-1	Seismic Design	
010	FAD	1/20/83	3/4/83	4/14/83	7/12/83			1.10-1	Hydraulic Design	•
011	LB	1/27/83	3/4/83	3/4/83				1.19-1	Control Systems	
012	LB	2/7/83	3/4/83	3/4/83		7/12/83		1.15-1	Power Supplies	
013	RPS	2/8/83	3/4/83		7/12/83			1.5-1	Syst. Align./Switchover	

\* Change in Status During Reporting Period

## OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM

## MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

## (Continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item	Finding Report	Finding Resolution Report	Topic		Comments
014	RPS	2/8/83	3/4/83		7/12/83			1.5-1	Syst. Align./Switchover	
015	CS	2/10/83	3/4/83					111.1-1	Seismic Design/Input to Equipment	
016	CS	2/10/83	3/4/83					111.5-1	Civil/Stu Design Consid.	
017	FAD	2/17/83	3/4/83	3/4/83				1.11-1	Heat Removal Cap	
								1.10-1	Hydraulic Design	
018	FAD	2/17/83	3/4/83	3/4/83				1.11-1	Heat Removal Cap.	
019	LB	2/21/83	3/4/85					1.18-1	Instrumentation	
020	FAD	2/24/83	3/4/83	3/4/83				1.11-1	Heat Removal Cap.	
								1.9-1	Comp. Func. Req.	
021	FAD	2/24/83	3/4/83					11.10-1	Eq. Qual.	0-21, Rev. 1,
022	LB	2/24/83	3/4/83					1.19-1	Control Syst.	4/14/83
023	LB	2/28/83	3/4/83					1.18-1	Instrumentation	
								1.19-1	Control	

## OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM

# MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

## (Continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item	Finding Report	Finding Resolution Report	Topic		Comments
024	RPS	3/1/83	3/4/83					1.2-1	Acc. Anal. Consid.	
025	RPS	3/1/83	3/4/83	3/4/83				1.2-1	Acc. Anal. Consid.	
026	RPS	3/1/83	3/4/83					1.8-1	Overpress, Prot.	
027	FAD	3/1/83	3/4/83	3/4/83				1.9-1	Comp. Func. Req.	
								11.9-1	Env. Eng.	
028	FAD	3/2/83	3/4/83	4/14/83				1.9-1	Comp. Func. Req.	
029	LB	2/22/83	3/4/83		3/4/83			1.18-1	Instrumentation	
								1.19-1	Control System	
030	LB	1/19/83	3/4/83		3/4/83			1.19-1	Control System	
031	C5	2/11/83	3/4/83	3/4/83				1.3-lc	Pipe Supports	C-31, Rev. 1, 7/12/83*
032	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	1.3-lc	Pipe Supports	C-32, Rev. 1, 7/12/83

## OCR, FINDING REPORT, AND FINDING RESOLUTION REPORT TRACKING SYSTEM

## MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM

#### (Continued)

OCR No.	Resp. LTR	Potential Open Item	Open Item	Confirmed Item	Resolved Item	Finding Report	Finding Resolution Report	<u>Topic</u>		Comments
033	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	1.3-lc	Pipe Supports	C-33, Rev. I, 7/12/83*
034	CS	2/11/83	3/4/83	3/4/83		7/12/83	7/12/83	1.3-lc	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		11.ž-1	Pressure Boundary	C-36, Rev. 2, 7/12/83*
037	CS	1/20/83	3/4/83	3/4/83				111.1-1	Seismic Design/Input to Equipment	
038	LB	3/1/83	3/4/83	3/4/83				1.15-1	Power Supplies	
039	LB	3/30/83	4/14/83					11.10-1	Env. Eq. Qual.	
040	LB	3/8/83	4/14/83					1.16-1	Elec. Characteristics	
041	LB	3/25/83	4/14/83					1.15-1	Power Supplies	
042	LB	3/31/83	4/14/83					1.10-1	Env. Eq. Qual.	
043	FAD	3/15/83	4/14/83					1.10-1	System Hydraulic Design	
044	FAD	3/15/83	4/14/83					11.10-1	Env. Eq. Qual.	
045	Tulo	3/17/83	4/14/83	5/25/83				II.1-1C	Electrical Equipment/ Storage & Maintenance	C-45, Rev. 1, 7/12/83*
046	Tulo	3/17/83	4/14/83	5/25/83				1.1-1C	Mechanical Equipment/ Storage & Maintenance	

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

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TYPE OF REPORT: OPEN			FILE NO. <u>3201-008</u> DOC NO. <u>3201-008-R-001</u> REV. NO. 0
DATES REPORTED TO: L	TR 7/12/83 SRT RINCIPAL-IN-CHARGE 7/12/	PROJECT TEAM	N/PROJECT MGR. 7/12/83
STRUCTURE(S), SYSTEM(S)	OR COMPONENT(S) INVOLVED	:	
AFW System operabil	ity and surveillance r	equirements in T	echnical Specifications
IDCV PROGRAM AREA OR	TASK (IF APPLICABLE):		
Topic I.4-1, Techni	cal Specifications		
DESCRIPTION OF CONCEP A commitment made Midland Technical S recommendation GS-( is not clear that dual valve lineup a incorporate a requ	IN: In response to NRC requ Specifications. That c is regarding verification the Technical Specificat after maintenance. Als irement for valve lineu	ests has not bee ommitment involv n of proper AFW tions do incorpo o, the associate p verification (	en incorporated into the ved NUREG-0611, Appendix III system valve lineup. It orate the means to assure ed draft procedure does not (see OCR-014).
SIGNIFICANCE OF CONCE	RN:		
Valve lineur after	maintenance or testing	may not be corr	rect
furre friteup di cer	indifficentiation of costing		
RECOMMENDATION	OR RESOLUTION X		
RECOMMENDATION	OR RESOLUTION X	_: os an Observation	n (B-001)
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REFERENCES (INCL. REL SIGNATURE(S): RPS OCR ITEM REPORT ORIGINATOR 7/12/83	OR RESOLUTION X ved by classification a EQUIRED): ATED OCR ITEM REPORT NO.): RPS HAI LTR PROJECT FOR PRO 7/12/83 7/	_: Is an Observation	WB IINCIPAL- CHARGE /14/83

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

			FILE NO.	3201-008
TYPE OF REPORT: OP	EN COM	ITEM	DOC NO.	3201-008- B- 001
bservation RE.		112m	REV. NO.	7/10/92
DATES REPORTED TO:	PRINCIPAL-IN-CH	ARGE 7/12/83 CPC/D	CT TEAM/PROJECT N	MGR
STRUCTURE(S), SYSTEM	(S), OR COMPONEN	IT(S) INVOLVED:		
Procedures and Te	chnical Speci	fications regarding A	FW System valve	alignment
IDCV PROGRAM AREA C	R TASK (IF APPLI	CABLE):		
Topic 1.4-1, Tech Topic 1.5-1, AFW	nical Specific System Alignmo	cations ent/Switchover		
DESCRIPTION OF CONC	ERN:			
I. Review of Tec	hnical Specif	ications has shown th	at there is no	requirement
expressly stated	for a second w	valve lineup check af	ter AFW system	maintenance,
G3-6 of NUREG-061	1. App. 111.	II. Review of draft	procedure OPS S	urv 3395.1
(Unit 2), dated J	anuary 14, 19	32, has also raised o	uestions regard	ing valve align-
ment after mainte	nance and/or	testing. Although ea	ch valve lineup	enclosure includes
"position require	d', it then ca	thus potentially r	"original posit	ion" & signing for
	ginal u	positions are correct	. Also there i	s no requirement
SIGNIFICANCE OF CONC	that th	ne plant/shift superv	isor review the	valve lineup shee
	to assi	are AFW system readin	ess.	
Potential misalig	nment of AFW	system valves after m	aintenance and/	or testing.
		.,		c. costing.
RECOMMENDATION	OR RESOLU			
This observation	is a combinat	ion of related items:	confirmed ite	m 001 and open
item 014. It is	recommended th	hat the procedure be	reviewed to rem	ove any
ambiguity and tha	t the Tecnica	I Specifications spec	ifically incorp	orate the
requirement for a	second valve	alignment check afte	r either mainte	nance or
cesering.				
COMMENTS BY EDT //F				
COMMENTS DT SKT (F	REGUIREDI:			
REFERENCES (INCL. RE	ATED OCR ITEM	REPORT NO.):		
SIGNATURE(S):	PDC	HAI	IR	
OCR ITEM REPORT	LTR	PROJECT MANAGER	PRINCIPAL-	SRT (IF REQUIRED)
ORIGINATOR		FOR PROJECT TEAM	IN-CHARGE	
7/12/83	7/12/83	7/12/83	7/14/83	
DATE	DATE	DATE	DATE	DATE

#### Recommendation

 Procedures should be implemented to require an operator to determine that the AFW system valves are properly aligned and a second operator to independently verify that the valves are properly aligned.

(2) The licensee should propose Technical Specifications to assure that, prior to plant startup following an extended cold shutdown, a flow test would be performed to verify the normal flow path from the primary AFW system water source to the steam generators. The flow test should be conducted with AFW system valves in their normal alignment.

#### Response

Maintenance and technical specification surveillance test procedures require that valves be returned to their original position after the completion of maintenance or surveillance testing. In addition, Subsection 16.4.7.1.2.A.3 requires a valve lineup

verification following maintenance or testing of the AFW system. The combination of these verifications constitutes two, independent valve lineup checks.

Subsection 16.3/4.7.1.2 requires a flowpath test every 18 months or after an extended cold shutdown. Extended cold shutdown is defined as a cold shutdown of 30 days or longer. The technical specification also specifies the flowpath as: motor driven pump with suction lined up to the condensate storage tank and discharging to both steam generators through the auxiliary feed nozzles.

16.4.7.1.2 Each auxiliary feedwater system shall be demonstrated OPERABLE:

- At least once per 31 days on a STAGGERED TEST BASIS by:
  - Verifying that the steam turbine driven pump develops a discharge pressure of 21,160 psig above suction pressure at a flow of 2850 gpm when the secondary steam supply pressure is greater than 885 psig when tested as required by the specification in Subsection 16.4.0.5.
  - Verifying that the motor driven pump develops a discharge pressure of ≤ (by amendment) psig at a flow of ≥ (by amendment) opm when tested as required by the specification in Subsection 16.4.0.5.
  - 3. Verifying that each valve (manual, power operated, or automatic) in the flowpath that is not locked, sealed or otherwise secured in position, is in its correct position.
  - Entry into Mode 3 is allowed for the purpose of performing the surveillance testing requirement in Subsection 16.4.7.1.2.a.1.

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

DATES REPORTED TO: LTR 7/6/83 SRT PRINCIPAL-IN-CHARGE STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) I AFW System Operability and Surveill	PROJECT PROJECT PROJECT CPC/DESIG NVOLVED: lance Requirements	TEAM/PROJECT MG	R. <u>7/12/83</u>
STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) I AFW System Operability and Surveill	NVOLVED: lance Requirements		
AFW System Operability and Surveill	ance Requirements		
		in Technical Sp	pecifications
IDCV PROGRAM AREA OR TASK (IF APPLICABLE	E):		
Topic 1.4-1, Technical Specificatio	ons		
DESCRIPTION OF CONCERN:			
Midland Technical Specifications do tions in that:	o not meet NRC B&W	Standard Techn	ical Specifica-
An action statement is needed systems are inoperable.	to require immedia	te action if b	oth AFW
SIGNIFICANCE OF CONCERN:		and the state of the second	
RECOMMENDATION OR RESOLUTION ic statement delineating action to commission; the T.S. do require action noperable. CPCo contends, and we contained in the NRC's standard corrective action to restore at leas as soon as possible") adds no real statements of the standard therefore unnecessary. This issue is	X X : The conce be taken in the eve on within an allot concur, that the add d Technical Specific st one auxiliary fea substance to the Tech is resolved.	ern was that th ent both AFW tr ted time period dition of a sta cations ("im edwater pump to chnical Specifi	e T.S. lack a spec ains are out of if one train is tement similar to mediately initiate operable status ications and is
COMMENTS BY SRT (IF REQUIRED):			
REFERENCES (INCL. RELATED OCR ITEM REPO	ORT NO.):		
SIGNATURE(S):	HA.	JB	
DDC DDC	IIAL		
RPS RPS	PROJECT MANAGER	PRINCIPAL-	SRT (IF REQUIRED)
RPS     RPS       OCR ITEM REPORT     LTR       ORIGINATOR     7/6/83	PROJECT MANAGER FOR PROJECT TEAM 7/12/83	PRINCIPAL- IN-CHARGE 7/14/83	SRT (IF REQUIRED)

#### PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

16.3.7.1.2 Two independent steam generator auxiliary feedwater pumps and associated flowpaths shall be OPERABLE with:

- One auxiliary feedwater pump capable of being a. powered from an OPERABLE emergency bus.
- One auxiliary feedwater pump capable of being b. powered from an OPERABLE steam supply system.
- Operation of the steam driven auxiliary feedwater C. pump for MODES 1, 2, 3, and 4, except for surveillance and testing requirements and when actuated by station emergency conditions, is prohibited unless the electric driven feedwater pump is inoperable.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With one auxiliary feedwater system inoperable, a. restore the inoperable system to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

16.4.7.1.2 Each auxiliary feedwater system shall be demonstrated 33 OPERABLE :

- a . At least once per 31 days on a STAGGERED TEST BASIS by:
  - 1. Verifying that the steam turbine driven pump develops a discharge pressure of 21,160 psig above suction pressure at a flow of 2850 gpm when the secondary steam supply pressure is greater than 885 psig when tested as required by the specification in Subsection 16.4.0.5.

133

16.3/4.7-4

**Revision 33** 4/81

133

## PLANT SYSTEMS

## AUXILIARY FEEDWATER SYSTEM

## LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

- a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate emergency busses, and
- One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

## ACTION:

- a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
- c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
  - Verifying that each motor-driven pump develops a discharge pressure of greater than or equal to \_\_\_\_\_\_ psig at a flow of greater than or equal to \_\_\_\_\_\_ gpm.
  - 2. Verifying that the steam turbine-driven pump develops a discharge pressure of greater than or equal to \_\_\_\_\_\_\_ psig at a flow of greater than or equal to \_\_\_\_\_\_\_ gpm when the secondary steam supply pressure is greater than \_\_\_\_\_\_\_ psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

SEP 1 7 1980

TYPE OF REPORT: OPEN CONFIRMED	FILE NO. 3201-006 DOC NO. 3201-008-R-010
DATES REPORTED TO: LTR 7/5/83 SRT P	ROJECT TEAM/PROJECT MGR. 7/12/83
PRINCIPAL-IN-CHARGE 7/12/83 C	PC/DESIGN ORG.
STRUCTURE(S), SYSTEM(S), OR COMPONENT(S) INVOLVED:	
AFW - Piping and valves	and the second second second second
IDCV PROGRAM AREA OR TASK (IF APPLICABLE):	
Hydraulic design (I.10-1)	
DESCRIPTION OF CONCEPN.	
and not designated as Seismic Cat I as being cap of water after an SSE.	able of retaining a minimum volume
SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&II result in damage to the AFW pumps and prevention safety function.	) (M 439) as being non-Cat I would n of the achievement of their
SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&II result in damage to the AFW pumps and prevention safety function.	) (M 439) as being non-Cat I would h of the achievement of their
SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&II result in damage to the AFW pumps and prevention safety function. RECOMMENDATIONOR RESOLUTIONX:	) (M 439) as being non-Cat I would n of the achievement of their
SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&ID result in damage to the AFW pumps and prevention safety function. RECOMMENDATIONOR RESOLUTIONX: Although not designated as seismic on the P&ID showed that the piping in question was analyzed	) (M 439) as being non-Cat I would h of the achievement of their , a review of Bechtel calculations for seismic events.
SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&II result in damage to the AFW pumps and prevention safety function. RECOMMENDATIONOR RESOLUTIONX: Although not designated as seismic on the P&ID showed that the piping in question was analyzed COMMENTS BY SRT (F REQUIRED):	) (M 439) as being non-Cat I would h of the achievement of their , a review of Bechtel calculations for seismic events.
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SIGNIFICANCE OF CONCERN: Failure of the section of pipe shown on the P&II result in damage to the AFW pumps and prevention safety function. RECOMMENDATIONOR RESOLUTIONX: Although not designated as seismic on the P&ID showed that the piping in question was analyzed COMMENTS BY SRT (F REQUIRED): REFERENCES (INCL. RELATED OCR ITEM REPORT NO.): (1) See OCR 3201-008-C-010 (2) P&ID M439 Sheets 3A (Rev 9) and 3B ( SIGNATURE(SE	(M 439) as being non-Cat I would of the achievement of their , a review of Bechtel calculations for seismic events. (3) Bechtel Calculation SC-2-634-3(Q)H
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	I INDING F	REPORT	RIFICATION
LASS: SAFETY X		FILE DOC REV.	NO. <u>3201-008</u> NO. <u>3201-008</u> F-012 NO.
DATES REPORTED TO: PR	OJECT TEAM/PROJECT MGR. 1 T 7/12/83 CPC/DESIGN O	6/30/83_ PRINCIPAL-IN-	CHARGE 7/12/83
STRUCTURE(S), SYSTEMS(S)	, OR COMPONENT(S) INVOLVED		
Steam isolati 3x-1, 3x-2, 3	on valves 2 MO-3277A a ix-4, 3x-5	nd B and FOGG Relays	
DESCRIPTION OF FINDING:			
The FOGG rela powered from 1 blackout ( lo steam isolati the inability	ys 3x-1, 3x-2, 3x-4 and 20 VAC power (not preferss of all ac) these re- on valves 2MO-3277A and of the turbine driven	d 3x-5 located in par erred power). Durin lays would deenergiz d B to close. This AFW pump to function	nel 2C14 are g a station e causing the would result in n.
SIGNIFICANCE OF FINDING	2		
The loss of p prohibits the is restored. be operable f	ower to the FOGG relay AFW system from provi- The AFW system does no for two (2) hours under	s during a station b ding feedwater flow ot meet the design r station blackout co	lackout until ac power equirement to nditions.
RECOMMENDATION			
Corrective ac	tion be taken to power:	the FOGG relays from	m preferred .
power.			
COMMENTS BY SRT (IF REC	SUIRED):		
COMMENTS BY SRT (IF REC	SUIRED):		
COMMENTS BY SRT (IF REC REFERENCES (INCL. RELA OCR 3201-008- Midland FSAR	TED OCR ITEM REPORT NO.): C-012; Schematic Diagr Section 10.4.9.1.1.	ams E-158 SH 24,25,4	1,42
REFERENCES (INCL. RELA OCR 3201-008- Midland FSAR	TED OCR ITEM REPORT NO.): C-012; Schematic Diagr Section 10.4.9.1.1.	ams E-158 SH 24,25,4	1,42
REFERENCES (INCL. RELA OCR 3201-008- Midland FSAR SIGNATURE(S):	TED OCR ITEM REPORT NO.): C-012; Schematic Diagr Section 10.4.9.1.1.	ams E-158 SH 24,25,4	1,42
REFERENCES (INCL. RELA OCR 3201-008- Midland FSAR SIGNATURE(S): X. Marker FINDING REPORT ORIGINATOR (LTR)	TED OCR ITEM REPORT NO.): C-012; Schematic Diagr Section 10.4.9.1.1. PROJECT MANAGER FOR PROJECT TEAM	ams E-158 SH 24,25,4	1,42 DKD SRT (IF REQUIRED)

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

TYPE OF REPORT: OPE		IRMED X	- FI D R	LE NO. <u>3201-008</u> OC NO. <u>3201-008-C-031</u> EV. NO. 1
DATES REPORTED TO:	LTR 6/27/83 PRINCIPAL-IN-CHA	SRT	PROJECT TEAM/PRO	DJECT MGR. 6/27/83
STRUCTURE(S), SYSTEM	S), OR COMPONENT	(S) INVOLVED:		
AFW System Pipe Su	ipports			
IDCV PROGRAM AREA O Topic 1.3.1c - Pip Verification of Ph	R TASK (IF APPLIC De Supports hysical Configu	ABLE): uration		
DESCRIPTION OF CONC	ERN:	1		
related to incons verification of Al taken as a group, progress - i.e., warranted by cons incorporated into	istencies in d FW system pipin establish a t that process u truction/insta the original	imensions and ng, pipe supp rend potentia sed to ensure llation activ design docume	orientation note orts and hangers. Ily affecting the that changes to ities, are accura nts.	ed during the field The five OCR's, when design finalization the original design, ately and consistently
SIGNIFICANCE OF CON	ERN:			
accurately and co	nsistently fac	tored into th	e original design	n resulting in
situations whereb to determine that configuration.	y the as-insta original desi	gn criteria a	n may not be ana re satisfied by	lyzed nor evaluated the as-installed
situations whereb to determine that configuration. RECOMMENDATION	y the as-insta original desi X OR RESOLU	TION:	n may not be ana re satisfied by	lyzed nor evaluated the as-installed
situations whereb to determine that configuration. RECOMMENDATION ICV reviewers hav fications to pipi continue in order changes to piping that original des installed configu	x OR RESOLU e initiated a ng and pipe ha to confirm th and pipe hang ign documentat ration.	TION: review of the nger drawings at the existi er and suppor ion accurate1	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent	lyzed nor evaluated the as-installed to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as-
RECOMMENDATION ICV reviewers hav fications to pipi continue in order changes to piping that original des installed configur	X OR RESOLU e initiated a ng and pipe ha to confirm th and pipe hang ign documentat ration. REQUIRED):	TION: review of the nger drawings at the existi er and suppor ion accurate1	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent	lyzed nor evaluated the as-installed to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as-
RECOMMENDATION ICV reviewers hav fications to pipi continue in order changes to piping that original des installed configur COMMENTS BY SRT (IF REFERENCES (INCL. RE Dwg. 7220-H-639, Spec. 7220-H-326	X OR RESOLU e initiated a ng and pipe hang to confirm th and pipe hang ign documentat ration. REQUIRED): ELATED OCR ITEM I Sh. 14(Q), Rev (Q), Rev. 8 "In	TION: review of the nger drawings at the existing ion accuratel REPORT NO.): 7. 11 hstallation,	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent	lyzed nor evaluated the as-installed to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as-
RECOMMENDATION ICV reviewers hav fications to pipi continue in order changes to piping that original des installed configu COMMENTS BY SRT (IF REFERENCES (INCL. RE Dwg. 7220-H-639, Spec. 7220-M-3260 SIGNATURE(S):	X OR RESOLU e initiated a ng and pipe ha to confirm th and pipe hang ign documentat ration. REQUIRED): ELATED OCR ITEM I Sh. 14(Q), Rev (Q), Rev. 8 "In	TION: review of the nger drawings at the existing ion accuratel REPORT NO.): /. 11 hstallation,	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent	lyzed nor evaluated the as-installed to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as-
RECOMMENDATION ICV reviewers hav fications to piping that original des installed configur COMMENTS BY SRT (IF REFERENCES (INCL. RE Dwg. 7220-H-639, Spec. 7220-M-3260 SIGNATURE(S): DT	X OR RESOLU e initiated a ng and pipe ha to confirm th and pipe hang ign documentat ration. REQUIRED): ELATED OCR ITEM M Sh. 14(Q), Rev. (Q), Rev. 8 "In	TION: review of the nger drawings at the existing ion accurate of the REPORT NO.): /. 11 installation, HAL	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent Inspect. & Doc. c 	lyzed nor evaluated the as-installed to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as-
REFERENCES (INCL. RE Dwg. 7220-H-639, Spec. 7220-M-326) SIGNATURE(S): DT OCR ITEM REPORT ORIGINATOR	X OR RESOLU e initiated a ng and pipe ha to confirm th and pipe hang ign documentat iration. REQUIRED): ELATED OCR ITEM F Sh. 14(Q), Rev (Q), Rev. 8 "In DT LTR	TION: review of the nger drawings at the existing ion accurated REPORT NO.): /. 11 hstallation, HAL PROJECT MA FOR PROJEC 7/12/8	n may not be ana re satisfied by processes used . It is recomme ng processes use t drawings are e y and consistent Inspect. & Doc. c JB NAGER PRINCH TTEAM IN-CHA	to control field modi- nded that this review d to control field ffective in ensuring ly reflects the as- of Pipe Supports)" PAL- RGE 4/83

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

TYPE OF REPORT: OF RE	EN CONF	IRMED X	FILE NO. DOC NO. REV. NO.	3201-008 3201-008-C_032
DATES REPORTED TO:	LTR 5/27/83 PRINCIPAL-IN-CHA	SRT PROJECT	TEAM/PROJECT MO	R. 6/27/83
STRUCTURE(S), SYSTEM	A(S), OR COMPONENT	(S) INVOLVED:		
AFW System Pipe	Supports			
IDCV PROGRAM AREA Topic 1.3-1c- Pi Verification of	OR TASK (IF APPLIC) pe Supports Physical Config	ABLE): uration		
DESCRIPTION OF CON	CERN:			1. Sector states
<ul> <li>Hanger H-10, red-lined det by the site r</li> </ul>	a horizontal sn ail hanger draw esident enginee	ubber, is properly in ling. Changes indica r.	nstalled in acco ted on the draw	ordance with the ings were approved
<ul> <li>Hanger locati its design lo piping isomet</li> </ul>	on for hanger H ocation (along t tric drawing.	-10 was field measur he direction of the	ed to be approx bipe axis) as s	imately 3' from hown on the
SIGNIFICANCE OF COM	CERN:			
<ul> <li>Changes to de sarily be fee consistent ma</li> </ul>	esign caused by d back into the anner.	construction/install design finalization	ation activitie process in an a	s may not neces- ccurate and
• Since the pip analysis, the affected lear	bing isometric o e piping analysi ding to higher s	drawing is used as in is for this portion o support loads and pip	put to the pipi f the system ma ing stresses th	ng stress y be adversely an calculated.
RECOMMENDATION _	X OR RESOLUT	TION:		5. S. M. M.
<ul> <li>Confirm that drawing - the</li> </ul>	as-installed die document contr	imensions are indicat rolling input to the	ed on the pipin piping stress a	g isometric nalysis.
<ul> <li>Review exist changes are</li> </ul>	ing processes an consistently and	nd procedures utilize d accurately reflecte	d to ensure tha d in design doc	t field umentation.
	REQUIRED)			
COMMENTS BY SRT (IF	REGUIREDA.			
COMMENTS BY SRT (IF	REGUINED).			
COMMENTS BY SRT (IF		REPORT NO 1		
COMMENTS BY SRT (IF REFERENCES (INCL. F Dwg. 7220-H-639 Spec. 7220-M-32	RELATED OCR ITEM F , Sh. 14 (Q), R 6, Rev. 8 "Inst	REPORT NG.): ev. 11, attached red1 allation, Inspect. &	ine for H-10 Doc. of Pipe Su	ipports''
COMMENTS BY SRT (IF REFERENCES (INCL. F Dwg. 7220-H-639 Spec. 7220-M-32 SIGNATURE(S):	RELATED OCR ITEM F , Sh. 14 (Q), R 6, Rev. 8 "Inst	REPORT NG.): ev. 11, attached red1 allation, Inspect. &	ine for H-10 Doc. of Pipe Su	ipports''
COMMENTS BY SRT (IF REFERENCES (INCL. F Dwg. 7220-H-639 Spec. 7220-M-32 SIGNATURE(S): DT	RELATED OCR ITEM F , Sh. 14 (Q), R 6, Rev. 8 "Inst	REPORT NC.): ev. 11, attached red1 allation, Inspect. & HAL	ine for H-10 Doc. of Pipe Su JB	set (if REQUIRED)
COMMENTS BY SRT (IF REFERENCES (INCL. F Dwg. 7220-H-639 Spec. 7220-M-32 SIGNATURE(S): DT OCR ITEM REPORT ORIGINATOR	RELATED OCR ITEM F , Sh. 14 (Q), R 6, Rev. 8 "Inst DT LTR	HAL FOR PROJECT MANAGER FOR PROJECT TEAM	ine for H-10 Doc. of Pipe Su JB PRINCIPAL- IN-CHARGE	sRT (IF REQUIRED)

				N IN IS	A 13417/20		W (How w)		XX	XXX	T X X X X					N D D N	Franks In			CONTROLLAR		C. ARE DUTSUINDER	ADVIDE THE DVOK				MERS POWER CA.	P.o. 7220 THOL AC	8-6-HIO 512	39-14-10(a) 3/2 M	and the second s
7.	Mr. M. dum	PRESSOR	4 SWAY	1000	12251ba		GR Brand + 1 S	1 sozimt W			THE THEFT	1 32-14	- P - 2- MA (95		(4) ····	1111200	1398	OUMUL	#0.		I MU I MU	FOR	1225	108 100.	7220	71	CURTOMER CONSU	ONDER ON CONT. NO	MARK NO. 6"- 2EB	NO. 2-6	WEET I UT. S.I.
	MATERIALS & OFENATION	IC NECHNICH SICK & SHAR SU	ISTROKE FKE ADD	RENSOR , CS. 14 , HS 6 14	OD PIPE CARBON STEEL LO	N U 15 12 1 1 1	NAME OF A DESCRIPTION O	26 X 250 X 10'-11'14 (A Souger	(ac ye) to the to the buy	2 x 7 x 1- 6"LG (SA- 36)	44 34940-374 LG C34 3	12 L'-B/6-14(84-96)	1 2 You No not 2 4 water	TAX A 244 HIGH WE CAN	FILLD CUT TO SUIT	DITTA L.			NIALS AND OPERATIONS SEE	4 4	UPBET			V INSPECTION	EF. DRAWING MUMBERS	SI RENES HVAC: H234 REV.S			The of you will der person		Toma
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1	Server Server	Const	Idans I				1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	シーノンに	THIS AN		INTER OF INTERIOR	111110	ALL DELES	X			A Huse	FOR WATE	= 3010 M31 CONDITION	RBIT DEBIGA	1 O MENDENC	Cantor I I I I I	THE PART	Adv	CATION NAME STEELLS-6			Sint (a) H46 92 W 50 35 1 3000	CORP. FCW M- 3224	
State of the state	Chick and	"Ter I	Al (mail -	10:25:01	101	のとうして	いてきていて	Rat 1 cats	as a line		AN AN		白いな話書		A ANY	してく	「「「「	Sixtem A. Mart	CLISBOAT - 4				N ACCORDANCE WITH T	THOM 7279-M. 344"	SAIL SAIL	The second marking the	And an and a second second		O WEARINGED FOR	01 45 MG	REV. DATE
にいたかい	15 m . 2 101	ILIAN O	T I I I I I I I I I I I I I I I I I I I	ライークハー	the base of the	1 or N	H and i o	1			2400-6 1 14- 12 H	In NIM LING 19 7 . A	7		AN PIR		L'aveitt uouember 1	A lar in	Xtr	the first		TAU AA		The second secon	SPATTING AROUND PLATE AND MUD	BELL FA - IZALL ME - 2003 MAN	11" C 10" 14 10 10 10 10 10 10	H-UN-14 (a) Rev 7	242 (2) 24 (2)	4.	4
「ころう」のないので	S Same	1 34	-								11					_		- <b>1</b>					~	21	01		1 200	-	_	-	



	FINDING R	EPORT	
CLASS: SAFETY X	NON-SAFETY	FILE NO DOC NO REV. NO	$\begin{array}{c} 3201-008 \\ 3201-008 \\ \hline 3201-008 \\ \hline 0 \\ 0 \\ \end{array}$
DATES REPORTED TO: PRO	JECT TEAM/PROJECT MGR. 7/12/83 CPC/DESIGN OF	7/1/83 PRINCIPAL-IN-CH	ARGE 7/12/83
STRUCTURE(S), SYSTEMS(S),	OR COMPONENT(S) INVOLVED:	A Local Destroyed	
AFW System Pipe Supp	orts		
DESCRIPTION OF FINDING:			
Hanger location for design location (alo isometric drawing.	hanger H-10 was field mg the direction of th	measured to be approxi ne pipe axis) as shown	imately 3' from it: on the piping
SIGNIFICANCE OF FINDING:			
leading to higher si	ipport loads and piping	SLIESSES LIGH CALCUL	aleu.
leading to higher su	ipport loads and piping	g stresses than carean	
RECOMMENDATION:	apport loads and piping		
RECOMMENDATION: Pursue resolution of that processes are design are accurate	f finding with cognization of the second sec	nt Bechtel engineering nsure that field modif flected in the design	personnel and ens ications to the documentation.
RECOMMENDATION: Pursue resolution of that processes are design are accurate	f finding with cogniza in place which would e ly and consistently re UIRED):	nt Bechtel engineering nsure that field modif flected in the design	personnel and ens ications to the documentation.
RECOMMENDATION: Pursue resolution of that processes are design are accurate COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh Spec. 7220-M-326, R	f finding with cogniza in place which would e ly and consistently re UIRED): ED OCR ITEM REPORT NO.): . 14(Q), Rev. 13, & Re ev. 8 "Installation, 1	nt Bechtel engineering nsure that field modif flected in the design w. 14 - OCR 3201-008-0 nspection & Doc. of Pi	personnel and ens ications to the documentation.
RECOMMENDATION: Pursue resolution of that processes are design are accurate COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh Spec. 7220-M-326, R SIGNATURE(S):	f finding with cognization place which would end consistently related by and consistently related by and consistently related by and consistent of the second secon	nt Bechtel engineering nsure that field modif flected in the design	personnel and ens ications to the documentation.
RECOMMENDATION: Pursue resolution of that processes are design are accurate COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh Spec. 7220-M-326, R SIGNATURE(S): 	f finding with cognization place which would end consistently religned by and consistently religned by and consistently religned by and consistent of the second se	nt Bechtel engineering nsure that field modif flected in the design w. 14 - OCR 3201-008-0 nspection & Doc. of Pi	personnel and ens ications to the documentation. -032 pe Suports'' <u>DKD</u> SRT (JF REQUIRED)
RECOMMENDATION: Pursue resolution of that processes are design are accurate COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh Spec. 7220-M-326, R SIGNATURE(S): DT FINDING REPORT ORIGINATOR (LTR) 7/1/92	f finding with cognization place which would end consistently related by and consistent of the set of the se	nt Bechtel engineering nsure that field modif flected in the design ev. 14 - OCR 3201-008-C nspection & Doc. of Pi JB PRINCIPAL-IN-CHARGE 7/14/83	personnel and ens ications to the documentation. :-032 ipe Suports'' <u>DKD</u> SRT (IF REQUIRED) 7/14/83

	FINDING RESOL	UTION REPORT	
CLASS: SAFETY X	NON-SAFETY	FILE DOC REV	NO. <u>3201-008</u> NO. <u>3201-008-Z -032</u> NO. 0
DATES REPORTED TO: PRO	JECT TEAM/PROJECT MGR. 7/12/83 CPC/DESIGN	7/1/83 PRINCIPAL-IN	-CHARGE 7/12/83
STRUCTURE(S), SYSTEMS(S),	OR COMPONENT(S) INVOLVED	):	
AFW System Pipe Suppo	orts		
DESCRIPTION OF FINDING (C	R REFERENCE DOC. NO. OF	FINDING REPORT):	
Hanger location for a design location (alo isometric drawing.	Canger H-10 was field ng the direction of th	measured to be appro he pipe axis) as show	iximately 3' from its in on the piping
DESCRIPTION OF RESOLUTIO		and the sector of the	
H-10, the piping str tion for hanger H-10 piping stress analys document for input t been revised and imp fications to hanger RESOLUTION BASED UPON F Marked-up Dwg. 7220- Sh. 14 (Q), Rev. 14	ess analysis will be . TERA will review t is. (The piping isom o the piping stress a lemented which are de locations are compare OLLOWING DOCUMENTATION H-639,	revised to analyze the he revised piping isc etric drawing is the nalysis). Procedures signed to ensure that d against the piping N: Bechtel Procedure Procedure, has been procedures control detail hanger dwgs viously used red-1 above actions, whe PSDIV programs, in Bechtel have imple modifications to c generated changes	pmetric drawing and controlling design s and processes have t field-generated modi- isometric drawing. FPD-2.000, FCR/FCN n implemented as the ling the revisions to ., replacing the pre- ine procedure. The n coupled with the CCP dicate that CPCo & mented significant prog ontrol & verify field- to design documentation
COMMENTS BY SRT (IF REQ	UIRED):	TERA continues to tion and outputs o to "Recommendation as they specifical tems within the ID selection boundari	evaluate the implementa f these programs (refer " section of OCR-CO31) ly relate to piping sys CV systems sample es.
SIGNATURE(S):	HAL	JB	DKD
FINDING RESOLUTION	PROJECT MANAGER	PRINCIPAL-IN-CHARGE	SRT (IF REQUIRED)
7/1/83	7/12/83	7/14/83	7/14/83
And a state of the	And the second se	DATE	DATE

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

TYPE OF REPORT: OF	PEN COM	FIRMED X		FILE NO. DOC NO.	3201-008 3201-008- C- 033
DATES REPORTED TO:	LTR 7/12/83 PRINCIPAL-IN-CH	SRT	PROJECT TEA	M/PROJECT N	IGR. 7/12/83
STRUCTURE(S), SYSTEM AFW System Pipe	M(S), OR COMPONEN Supports	NT(S) INVOLVED:			
DCV PROGRAM AREA Topic 1.3-lc Pipe Verification of 1	OR TASK (IF APPLIC supports Physical Confid	CABLE):			
DESCRIPTION OF CONC	CERN:	guración			
<ul> <li>Hanger H-7, a per redline du</li> <li>E/W - redline</li> </ul>	vertical and wg. nor per has dim. $24-5\frac{1}{2}$ we	horizontal res nger isometric est of centerl	traint type ine, H-639 S	hanger is h. 14 calc	<u>not</u> installed 'd dim. 31'-0'',
<pre>measured 28'-  N/S - redline</pre>	dim. 37'8 1	5/16 south of a	centerline,	H-639, Sh.	14 calc'd dim.
38' - 1 1/8",	measured 40'	- 2 17/32"			
<ul> <li>Change to des sarily be fed consistent man</li> </ul>	ign caused by back into des	construction/in ign finalizatio	nstallation on process i	activities n an accur	may not neces- ate and
• Updating the to higher sup	isometric with port loads and	erroneous red piping stress	line data fo than calcul	r stress a ated.	nalysis may lead
RECOMMENDATION	OR RESOLU	TION:			5
· Confirm that a the document of	as-installed d	imnsions are in put to the pipe	ndicated on e stress ana	the pipe i lysis.	sometric dwgs
<ul> <li>Review existing are consistend review against corporation magainst</li> </ul>	ng processes an tly and accura t ECR, ECN, rea ay help.	nd procedures o tely reflected dline or other	utilized to in design do change docu	ensure tha ocumentati mentation	t field changes on. Quality prior to in-
COMMENTS BY SRT (IF	REQUIRED):				
<b>REFERENCES (INCL. RE</b> Dwg. 7220-H-639, Spec. 7220-M-326	LATED OCR ITEM F Sh. 14(Q), Rev. Rev. B insta	REPORT NO.): v. 11, Rev. 13 11ation inspec	& Rev. 14 & tion & doc.	attached of pipe su	redline for H-7 pports
BIGNATURE(S):	DT	HAL		В	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT MAN	AGER PRI	NCIPAL-	SRT (IF REQUIRED)
7/11/83 DATE	7/12/83 DATE	7/12/83 DATE	7	/14/83 DATE	DATE



	FINDING RE	PORT	
		FILE NO.	3201-008 3201-008 F- 033
CLASS: SAFETY X	NON-SAFETY	REV. NO.	5201-000 10 099
DATES REPORTED TO: PROJECT SRT _7/1	TEAM/PROJECT MGR. 7. 2/83 CPC/DESIGN OR	/1/83 PRINCIPAL-IN-CHA	RGE 7/12/83
STRUCTURE(S), SYSTEMS(S), OR CO	MPONENT(S) INVOLVED:		
AFW System Pipe Supports			
DESCRIPTION OF FINDING:			
Hanger 7 location field me	easured to be 2' to	3' from redline dimen	sions.
SIGNIFICANCE OF FINDING:			analysis of
RECOMMENDATION			
RECOMMENDATION:	the second	Pachtal anaineering De	acconci and
Pursue resolution of find insure that processes are to design are accurately	ing with cognizant in place which wo and consistently r	uld ensure that field m eflected in design docu	nodifications umentation.
Pursue resolution of find insure that processes are to design are accurately COMMENTS BY SRT (IF REQUIRED	ling with cognizant in place which wo and consistently r D):	ald ensure that field meeting period and the second	nodifications mentation.
REFERENCES (INCL. RELATED O Dwg. 7220-H-639-Sh. 14 (1)	CR ITEM REPORT NO.): Q), Rev. 11, 13 & 1	4 - attached redline M	-2-639-14(Q)7,Sh. 90
REFERENCES (INCL. RELATED O Dwg. 7220-H-639-Sh. 14 (I Spec. 7220-M-326, Rev. 8	CR ITEM REPORT NO.): Q), Rev. 11, 13 & 1 Installation, insp	4 - attached redline M ection & doc. of pipe	-2-639-14(Q)7,Sh. 90 supports
REFERENCES (INCL. RELATED O Dwg. 7220-H-639-Sh. 14 (I Spec. 7220-M-326, Rev. 8 SIGNATURE(S):	CR ITEM REPORT NO.): Q), Rev. 11, 13 & 1 Installation, insp	4 - attached redline M bection & doc. of pipe	-2-639-14(Q)7,Sh. 90 supports
REFERENCES (INCL. RELATED O Dwg. 7220-H-639-Sh. 14 (I Spec. 7220-M-326, Rev. 8 SIGNATURE(S): DT FINDING REPORT	CR ITEM REPORT NO.): Q), Rev. 11, 13 & 1 Installation, insp HAL PROJECT MANAGER	4 - attached redline M ection & doc. of pipe	-2-639-14(Q)7,Sh. 90 supports <u>DKD</u> SRT (IF REQUIRED)
REFERENCES (INCL. RELATED O Dwg. 7220-H-639-Sh. 14 (1 Spec. 7220-M-326, Rev. 8 SIGNATURE(S): DT FINDING REPORT ORIGINATOR (LTR) 7/1/83	CR ITEM REPORT NO.): Q), Rev. 11, 13 & 1 Installation, insp HAL PROJECT MANAGER FOR PROJECT TEAM 7/12/83	4 - attached redline M bection & doc. of pipe JB PRINCIPAL-IN-CHARGE 7/14/83	-2-639-14(Q)7,Sh. 90 supports DKD SRT (IF REQUIRED) 7/14/83

MIDLAND INDE	FINDING RESOLUTI	ON REPORT	ICATION
CLASS: SAFETY X	NON-SAFETY	FILE NO. DOC NO. REV. NO.	<u>3201-008</u> <u>3201-008-</u> Z- 033 0
DATES REPORTED TO: PROJE	CT TEAM/PROJECT MGR. 7/ 7/12/83 CPC/DESIGN ORG	1/83 PRINCIPAL-IN-CHA	RGE 7/12/83
TRUCTURE(S), SYSTEMS(S), OF AFW System Pipe Suppor	R COMPONENT(S) INVOLVED: t		
DESCRIPTION OF FINDING (OR Hanger 7 location fie	REFERENCE DOC. NO. OF FINE	DING REPORT): 3' from redline dime	ensions.
DESCRIPTION OF RESOLUTION Bechtel personnel have process of revising H	4: e become aware of the d -639, Sh. 14 hanger iso	imensional errors and metric and related st	are in the ress analysis
to conform to "as buil	lt" conditions.		
to conform to "as buil RESOLUTION BASED UPON FO Discontinued use of re and implementation of TERA continues to eval (refer to "recommendat piping systems within	LLOWING DOCUMENTATION: edline procedure, repla the CCP and PSDIV prog luate the implementatio tions" of OCR C-031) as the IDCV system sample	cement with FCR/FCN p rams. In and outputs of thes they specifically re selection boundaries	rocedures e programs late to
to conform to "as buil RESOLUTION BASED UPON FO Discontinued use of re and implementation of TERA continues to eval (refer to "recommendat piping systems within COMMENTS BY SRT (IF REQUI	LLOWING DOCUMENTATION: edline procedure, repla the CCP and PSDIV prog luate the implementatio tions" of OCR C-031) as the IDCV system sample	cement with FCR/FCN p rams. n and outputs of thes they specifically re selection boundaries	rocedures e programs late to
to conform to "as buil RESOLUTION BASED UPON FO Discontinued use of re and implementation of TERA continues to eval (refer to "recommendat piping systems within COMMENTS BY SRT (IF REQUI	LLOWING DOCUMENTATION: edline procedure, repla the CCP and PSDIV prog luate the implementatio tions" of OCR C-031) as the IDCV system sample RED):	cement with FCR/FCN p rams. n and outputs of thes they specifically re selection boundaries	rocedures e programs late to
to conform to "as buil RESOLUTION BASED UPON FO Discontinued use of re and implementation of TERA continues to eval (refer to "recommendat piping systems within COMMENTS BY SRT (IF REQUI SIGNATURE(S): DT FINDING RESOLUTION REPORT ORGIN, (LTR)	LLOWING DOCUMENTATION: edline procedure, repla the CCP and PSDIV prog luate the implementatio tions" of OCR C-031) as the IDCV system sample RED: HAL PROJECT MANAGER FOR PROJECT TEAM	cement with FCR/FCN p rams. n and outputs of thes they specifically re selection boundaries	DKD SRT (IF REQUIRED)

-	THE REPERT DESIGN AND CONSTRUCTION VERIFICATION	
	MIDLAND INDEPENDENT DESIGN AND CONSTRUCTION VERTICATION	
	OPEN, CONFIRMED AND RESOLVED (OCR) ITEM REPORT	

TYPE OF REPORT: OPEN RESOL	CONFIF	RMED X	FILE NO. 3 DOC NO. 3 REV. NO.	201-008 201-008-C -034 1
DATES REPORTED TO:	TR 6/30/83 SI	RT PROJ GE 7/12/83 CPC/	ECT TEAM/PROJECT MG	R. <u>6/30/83</u>
STRUCTURE(S), SYSTEM(S)	OR COMPONENT	S) INVOLVED:		
AFW System Pipe S	upports			
IDCV PROGRAM AREA OR Topic 1.3-1 - Pip Verification of P	TASK (IF APPLICAS e Supports hysical Config	BLE): uration		
<ul> <li>DESCRIPTION OF CONCER</li> <li>Red-lined deta than the actua hanger install run of pipe.</li> <li>Piping isometr actual, as-install</li> </ul>	IN: il hanger draw 1, as-installe ation on the M ic drawing sho talled locatio	ving shows hanger ed location. Red- N-S run of pipe; a ows hanger H-4 on on.	H-4 on opposite si lined hanger drawi ctual installation opposite side of S	de of 90 <sup>°</sup> elbow ng depicts is on the E-W 90 <sup>°</sup> elbow than the
• Dimensionally	the red-lined	detail hanger dra	correct but the c	prientation of
SIGNIFICANCE OF CONCE	the hange	r relative to E-W	and N-S is incorre	ect.
<ul> <li>Changes to design sarily be fed back consistant manned.</li> <li>Since the piping the piping stress the</li></ul>	n caused by co ack into the de er. g isometric dr ss analysis fo OR RESOLUT	awing is used as r this portion of	input to the pirin the system may be leading to highe	g stress analysis, adversely affected
<ul> <li>Confirm with conconfiguration on hanger drawing</li> <li>Review existing configuration i</li> </ul>	gnizant Bechte f Hanger H-4 i and the piping processes and s consistently	l engineers that s incorporated in isometric drawin procedures utili and accurately r	the as-installed to the Jetail g. zed to ensure that eflected in design	the as-installed documentation.
COMMENTS BY SRT (IF R	EQUIRED):			
		1.11		
REFERENCES (INCL. REI Dwg. 7220-H-639, S Spec. 7220-M-326 (C	ATED OCR ITEM R h. 14 (Q) Rev 1), Rev. 8 "In:	EPORT NO.): . 11, attached red stallation, Inspec	dline for H-4 ct. & Doc. of Pipe	Supports"
SIGNATURE(S):		the state strain		
		PROJECT MANAGE	R PRINCIPAL-	SRT (IF REQUIRED)
ORIGINATOR	LIN	FOR PROJECT TEA	M IN-CHARGE	
6/30/83	6/30/83	7/12/83		DATE
DATE	DATE	DATE	PAIL	

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midera to a to	FINDING R	EPORT	
CLASS: SAFETY X	NON-SAFETY	FILE NO DOC NO REV. NO	$\frac{3201-008}{3201-008} = 0.34$
DATES REPORTED TO: PRO	JECT TEAM/PROJECT MGR. 7 CPC/DESIGN OF	71783 PRINCIPAL-IN-CH	ARGE 7/12/83
STRUCTURE(S), SYSTEMS(S),	OR COMPONENT(S) INVOLVED:		
AFW System Pipe Suppor	ts		
DESCRIPTION OF FINDING: Detail hanger drawing of 90° elbow than the installation on the N	and piping isometric o actual, as-installed l -S run of pipe-actual i	drawing show hanger H-J location. The drawings installation is on the	on opposite side depict hanger E-W run of pipe.
SIGNIFICANCE OF FINDING: Since the piping isom	etric drawing is used a	as input to the piping	stress analysis,
RECOMMENDATION:			
RECOMMENDATION: Pursue resolution of that processes are in is accurately and con	finding with cognizant place which would ens sistently reflected in	Bechtel engineering p ure that the as-instal the design documentat	ersonnel and ensur led configuration ion.
RECOMMENDATION: Pursue resolution of that processes are in is accurately and con	finding with cognizant place which would ens sistently reflected in UIRED):	Bechtel engineering p ure that the as-instal the design documentat	ersonnel and ensur led configuration ion.
RECOMMENDATION: Pursue resolution of that processes are in is accurately and con COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh. OCR 3201-008-C-034	finding with cognizant place which would ens sistently reflected in UIRED): ED OCR ITEM REPORT NO.): 14 (Q), Rev. 14	Bechtel engineering p ure that the as-instal the design documentat	ersonnel and ensur led configuration ion.
RECOMMENDATION: Pursue resolution of that processes are in is accurately and con COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh. OCR 3201-008-C-034 SIGNATURE(S):	finding with cognizant place which would ens sistently reflected in UIRED): ED OCR ITEM REPORT NO.): 14 (Q), Rev. 14	Bechtel engineering p ure that the as-instal the design documentat	ersonnel and ensur led configuration ion.
REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh. OCR 3201-008-C-034 SIGNATURE(S): CT FINDING REPORT	finding with cognizant place which would ens sistently reflected in UIRED): ED OCR ITEM REPORT NO.): 14 (Q), Rev. 14 HAL HAL HAL	Bechtel engineering p ure that the as-instal the design documentat	DKD
REFERENCES (INCL. RELAT Dwg. 7220-H-639, Sh. OCR 3201-008-C-034 SIGNATURE(S): CT FINDING REPORT ORIGINATOR (LTR)	finding with cognizant place which would ens sistently reflected in UIRED): ED OCR ITEM REPORT NO.): 14 (Q), Rev. 14 HAL PROJECT MANAGER FOR PROJECT TEAM	Bechtel engineering p ure that the as-instal the design documentat	DKD DKD SRT (IF REQUIRED) 7/14/83

	MIDLAN		PENDENT DESIGN A FINDING RESOL	ND CONSTRUCTIO	VERIFICA	TION
CLASS:	SAFETY	X	NON-SAFETY	-	FILE NO. <u>320</u> DOC NO. <u>320</u> REV. NO.	1-008 1-008- Z- 034
DATES RE	EPORTED TO:	PROJE	CT TEAM/PROJECT MGR. CPC/DESIGN	7/1/83 PRINCIPA	L-IN-CHARGE	7/12/83
STRUCTU AFW Sys	RE(S), SYSTE tem Pipe S	uppor	R COMPONENT(S) INVOLVE	D:		
Detail ha of 90° el stallatio DESCRIP . The ori	nger drawi bow than t on on the N TION OF RESO entation o	ng an he ac -S ru DLUTION	d piping isometric ( tual, as-installed n of pipe-actual in ger H-4 as depicted	drawing show hange location, the draw stallation is on t on the detail han	r H-4 on op ings depict he E-W run ger drawing	oposite side t hanger in- of pipe. g & the piping
ger on isometr Since t undergo vised p Procedu that th consist coupled mented tion to of thes cally r	the E-W runic are beind the piping or revision of revision of ping streated ares & proceed the as-instant cently composed with the significant of design do se programs relate to p	n of ng re isome to an esses alled ared CCP a t pro ocumen s (ref	n marked to indicate pipe next to the 90 vised & will be rev tric dwg. is being alyze for the as-in alysis. have been revised configuration of pi against the piping nd PSDIV programs, gram modifications tation. TERA conti er to "Recommendati systems within the	<pre>e that the as-inst ° elbow. The deta iewed by TERA upor revised, the pipir stalled location. &amp; implemented which ping hangers &amp; sup isometric drawing. indicate that CPCC to control &amp; verif nues to evaluate to on" section of OCF IDCV systems samp</pre>	iled hanger completion g stress an TERA will h are desig ports are a The above & Bechtel y as-insta he implement (C-031) as ble selection	r dwg. & piping n of the revisi nalysis will al review the re- gned to ensure accurately and e action, when have imple- lled configura- ntation & output they specifi- on boundaries.
RESOLUT	TION BASED	UPON	FOLLOWING DOCUMENTA	TION:		
COMMEN	ITS BY SRT (IF	REQUI	RED):			
SIGNATU	IRE(S):				<u>()</u>	
FINDIN	IG RESOLUTIO	N	PROJECT MANAGER	PRINCIPAL-IN-CHAP	UL SR	
REPOR	T ORGIN. (LT	<b>R</b> )	FOR PROJECT TEAM			T (IF REQUIRED)

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

TYPE OF REPORT: OPE		IRMED X		FILE NO. DOC NO.	3201-008 3201-008 - 035
RES	OLVED	ITEM		REV. NO.	2
DATES REPORTED TO:	LTR 6/27/83 PRINCIPAL-IN-CHA	SRT	PROJECT CPC/DES	IGN ORG.	GR. 6/27/83
STRUCTURE(5), SYSTEM( AFW System Pipe St	5), OR COMPONENT Ipports	(S) INVOLVED:			
IDCV PROGRAM AREA O Topic 1.3-1c Pipe Verification of Pl	R TASK (IF APPLIC) Supports hysical Config	ABLE): uration			
DESCRIPTION OF CONC Hanger H-11 is co by the cognizant	ERN: rrectly shown resident engin	on the detai eer.	led red-1	ined hanger dr	awing, approved
Changes depicted the piping isomet	on the detaile ric drawing.	d red-lined	hanger dr	awing were not	factored into
When changes on t drawing, a change	he detailed ha of l'2" in th	nger drawing e locating d	are fact imensions	ored into the for Hanger H-	piping isometric 11 will occur.
be fed back into manner. Since the piping the piping analys to higher support	the design fin isometric draw is for this po loads and pip	alization pr ing is used rtion of the ing stresses	ocess in as the in system m than cal	an accurate an put to the pip ay be adversel culated.	d consistent ing stress analysi y affected leading
RECOMMENDATION	X OR RESOLUT				
Confirm that as-i the document cont	nstalled dimen rolling input	sions are in the the pipi	dicated c ng stress	on the piping i analysis.	sometric drawing ·
<ul> <li>Review existing p consistently and</li> </ul>	rocesses and p accurately ref	rocedures ut lected in th	ilized to e design	ensure that f documentation,	ield changes are
COMMENTS BY SRT (IF	REQUIRED):				
REFERENCES (INCL. RE Drawing 7220-H639,	LATED OCR ITEM R Sh. 14 (Q), Re	EPORT NO.): ev. 11, attac	thed redli	ine foil H-11	
SIGNATURE(S).	101 3201-001-0	ion, pages /			
DBT	DBT	HAL		JWB	
OCR ITEM REPORT ORIGINATOR	LTR	PROJECT M	ANAGER	PRINCIPAL- IN-CHARGE	SRT (IF REQUIRED)
DATE	DATE	DAT	E	DATE	DATE

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	310/01/01	46.		Per Pr4	WALA'		$\rangle$	1 1 1 1 1		4		X	I	1	+		1		0	5									7220	) ) .	CUSTOME &	UNMER OR	JOD RANI	TUANK NB.	SK. MD.	SHEET 13	CT0- H7
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A. A. 1176	- CONSIATING			AC ALLEN	1 2°. L	.burd	2	~~~~	-	1			1H-9-88									T CHATROL			T		A No		Fee. 340 2.60	AVAC: M-	11. 10.						
2	Can solve a		- 412	Corten Ste	all 'E', T.	codility re	1		-	1		MPLE LIA	1-9 1						1	1 AL		In the second se		Tarea			TY INSPECTA	2-11-8	A	5.1 Bry 2		Ţ	-	1	-		
					14	37	*	11	1		+	90	R		+	1	in the fit	2	2	and the second	-Ch.	IV:ILJI	CONUTIN	HORMAL	ENERGEN	EAULTED	THIND PAR	CODE CLAS		Smell C-	ALL ATION			1.1		4	
	うが上た日	言語によってい	というできた。		Harrison In	T III I T Sector	1.1. 1.4 1 1. 4 . 1. 1. 1.	のないなけると	上の市地区が中国に一十回	いていていている	A south and the south and the	A State	「「「「「「「「「「「」」」」	WE WE WE WE	「ない」をあるのである	ECTION A-A HUST			くつい	ACTORDANCE ++ ACTOR	「「「「「「」」」	and all the state of the state	「「「ない」でいた。	していたの						1.0000000000000000000000000000000000000	A TON AND A TON	I ISUED TOTAL		from	43	144 m	たままであるという
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Bright West of the	A	L'AN	E	T	E			オーペン	二日村	NILL AN			Section 2	3	1-14			· sett	1 1 1		at the second	101	Nos	PA STATE		シートショ				Checkener	INC THE	1			and the second	1	111111111111111111
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Massas , 8 , -11-H Perc. 12 - 73. FOR CONSTRUCTION DUTROLLES 2 H 98 REV. O CONSUMERS ï 7220 .0H 00L 01 45 ŝ JUS Noller Luit. 342. M-74 Cel 2. ELECI. E - 650 REV 0 TEEL C- 6. 1 5. 7 . 44 4 0 1. 2. 1 REV A SHELT 15 GADES 3. CHERCHES HAN 5 110. 30 10 THIRD PARTY INSPECTION PIPE SPACER (2 REG'DI, MAT'L SA 106 GR.B NEXTR. F8 " \$ × 0'31/2" ( 6. BOLT w/ NEX. NUT ( 3 260 b) BAR SPACER 5: 10H \$ . 9% (b) -----BOLT MAT'L : SA- 193 GR. BT CLAMP MATERIAL: ASTM ASIS GR. 65 DEVLOPED LENGTH/HALF LENGTH OF CLANP. 2'-3/4" 1554ED 193 - 570CK SITE . 54" x 4" TOTAL WEIGHT= 41 Ubs. Ask : 5A- 307 GE. B q E = 10' DETAIL 'C' 23 12 HEX. NUT MAT'L - IO" 1123

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	FINDING REP	ORT	ICATION
CLASS: SAFETY X	NON-SAFETY	FILE NO. DOC NO. REV. NO.	3201-008 3201-008- F- 035 0
DATES REPORTED TO: PRO	OJECT TEAM/PROJECT MGR. 7/17 CPC/DESIGN ORG.	83 PRINCIPAL-IN-CHA	RGE 7/12/83
STRUCTURE(S), SYSTEMS(S), AFW System Pipe Suppo	OR COMPONENT(S) INVOLVED:		
DESCRIPTION OF FINDING: Hanger location for H location as shown on	langer H-11 was field mea the piping isometric draw	sured to be 1'2" from ving.	n its design
SIGNIFICANCE OF FINDING: Since the piping ison the piping analysis ing to higher suppor	metric drawing is used as for this portion of the s t loads and piping stress	input to the piping ystem may be adverse es than calculated.	stress analysis, ly affected lead-
RECOMMENDATION: Pursue resolution of processes are in pla are accurately and c	finding with cognizant B ce which would ensure tha onsistently reflected in	echtel engineers and t field modification the design documenta	ensure that s to the design tion.
RECOMMENDATION: Pursue resolution of processes are in pla are accurately and c	finding with cognizant B ce which would ensure tha onsistently reflected in UIRED):	echtel engineers and t field modification the design documenta	ensure that s to the design tion.
RECOMMENDATION: Pursue resolution of processes are in pla are accurately and c COMMENTS BY SRT (IF REG REFERENCES (INCL. RELAT Drawing 7220-H639, S Engineering Evaluati	finding with cognizant B ce which would ensure tha onsistently reflected in UIRED): TED OCR ITEM REPORT NO.): th. 14 (Q), Rev. 14 on 3201-001-001	echtel engineers and t field modification the design documenta	ensure that s to the design tion.

MIDLAND IND	EPENDENT DESIGN AN FINDING RESOLU	D CONSTRUCTION VER	FICATION
CLASS: SAFETY X	NON-SAFETY	FILE NO DOC NO REV. N	0. <u>3201-008</u> 0. <u>3201-008-</u> Z_035 0.
DATES REPORTED TO: PROJ	ECT TEAM/PROJECT MGR. 7 CPC/DESIGN O	7/1/83 PRINCIPAL-IN-CH	HARGE 7/12/83
STRUCTURE(S), SYSTEMS(S), O AFW System Pipe Suppor	R COMPONENT(S) INVOLVED: ts		
DESCRIPTION OF FINDING (OF Hanger location for Ha location as shown on t	REFERENCE DOC. NO. OF F anger H-11 was field r the piping isometric o	INDING REPORT): measured to be 1'2" fr drawing.	om its design
hanger H-II have been measured and as-insta upon completion of th Since the piping isom also undergo revision will review the revis Procedures & processe that field-generated isometric drawing, Be mented as the procedu the previously-used r & PSDIV programs, ind modifications to cont	marked & the drawing lled location. TERA e revision. etric drawing is bein to analyze for the a ed piping stress anal s have been revised & modifications to hang chtel procedure FPD-2 re controlling the re ed-line procedure. The icate that CPCo & Bec crol & verify field-gen luste the implementat	g revised, the piping s-installed location of ysis. implemented which are er locations are compa .000, FCR/FCN Procedur visions to detail hang the above actions, wher thel have implemented enerated changes to des ion and dutputs of the	isometric drawing stress analysis will of hanger H-11. TERA e designed to ensure ared against the pipi- be, has been imple- ger drawings, replaci- n coupled with the CC significant program sign documentation. ese programs (refer t
"Recommendation" sect within the IDCV syste RESOLUTION BASED UPON	ion of OCR C-031) as ms sample selection t FOLLOWING DOCUMENTAT	they specifically rela boundaries. ION: Marked-up Dwg. 7	ate to piping systems 220-H639,Sh.14(Q).Rev
COMMENTS BY SRT (IF REG	JIRED):		
SIGNATURE(5): DT FINDING RESOLUTION REPORT ORGIN. (LTR)	PROJECT MANAGER	PRINCIPAL-IN-CHARGE	SRT (IF REQUIRED)

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TYPE OF REPORT:	OPEN	CONFIRMED X		FILE NO. DOC NO.	3201-008 3201-008-C - 036
	RESOLVED	ITEM		REV. NO.	2
DATES REPORTED	TO: LTR 6/27/	83 SRT	PROJECT 1 CPC/DESIG	N ORG.	GR. 6/30/83
STRUCTURE(S), SY	STEM(S), OR COMPO	NENT(S) INVOLVED:			
AFW System Pipi	ng				
IDCV PROGRAM AF Topic 11.2-1 Pr Drawing Review	REA OR 1ASK (IF AF essure Boundar	PPLICABLE): Y			
DESCRIPTION OF 0 The offset dime given along pip 285, 300 and 30 have not been a	CONCERN: nsions to the e centerline a 6. Difference dequately chec	reactor centerl s follows: Dis s range from 5/ ked.	ine are not tances betw 16 & 7/16.	consistent w een DP 270 an Drawings tha	ith dimensions d 280, 280 and t have been signed
pecific case th or design and an	ne noted discrete primarily du	epancies would h ue to inattentio	ave no impa n to detail typically	during the p not used as i	oiping installation wg. checking proce
deference dimens biping stress an	nalyses.				
Reference dimension piping stress and RECOMMENDATION This OCR rela drawing-check	nalyses. N X OR RE tes principally ing process.	SOLUTION: y to more attent	ion to deta	ail being exer	cised during the
Reference dimension piping stress and RECOMMENDATION This OCR rela drawing-check A Finding sho to assess pro adverse impac	DN X OR RE tes principally ing process. uld be issued cess oriented t in other sit	SOLUTION: y to more attent and resolution s issues and the p uations.	tion to deta should proce	ail being exen eed in conjunc hat similar e	rcised during the ction with C-031 rrors could have
Reference dimension piping stress and RECOMMENDATION This OCR rela drawing-check A Finding sho to assess pro adverse impact	N X OR RE tes principally ing process. uid be issued cess oriented t in other sit	SOLUTION: y to more attent and resolution s issues and the p uations.	tion to deta	ail being exen eed in conjunc hat similar e	rcised during the ction with C-031 rrors could have
Reference dimension piping stress and RECOMMENDATION This OCR rela drawing-check A Finding sho to assess pro adverse impact	N X OR RE tes principall ing process. uid be issued cess oriented t in other sit	SOLUTION: y to more attent and resolution s issues and the p uations.	tion to deta should proce potential th	ail being exen eed in conjunc hat similar e	rcised during the ction with C-O31 rrors could have
RECOMMENDATION This OCR reladrawing-check A Finding sho to assess pro adverse impact COMMENTS BY SP REFERENCES (INC Drawing 7220-H-	N X OR RE tes principally ing process. uid be issued cess oriented t in other sit RT (IF REQUIRED): CL. RELATED OCR I 639 (Q), Sh. 1	SOLUTION y to more attent and resolution s issues and the p uations. TEM REPORT NO.): 4, Rev. 11 & En	should proce potential th g. Eval. 32	eed in conjunc hat similar e	rcised during the ction with C-O31 rrors could have
RECOMMENDATION This OCR rela drawing-check A Finding sho to assess pro adverse impact COMMENTS BY SP REFERENCES (INC Drawing 7220-H-	N X OR RE tes principall ing process. uld be issued cess oriented t in other sit CL. RELATED OCR I 639 (Q), Sh. 1	SOLUTION: y to more attent and resolution s issues and the p uations. TEM REPORT NO.): 4, Rev. 11 & En	g. Eval. 32	ail being exen eed in conjunc hat similar e 01-001-001, p	rcised during the ction with C-O31 rrors could have
RECOMMENDATION This OCR reladrawing-check A Finding sho to assess pro adverse impact COMMENTS BY SP REFERENCES (INC Drawing 7220-H- SIGNATURE(S): DBT OCR ITEM REPO	DN X OR RE tes principalle ing process. uid be issued cess oriented t in other sit RT (IF REQUIRED): CL. RELATED OCR I 639 (Q), Sh. 1 DBT RT DBT	SOLUTION y to more attent and resolution s issues and the p uations. TEM REPORT NO.): 4, Rev. 11 & En A PROJECT	g. Eval. 32	eed in conjunc hat similar e 01-001-001, p JB PRINCIPAL-	rcised during the ction with C-031 rrors could have age 9 SRT (IF REQUIRED)
REFERENCES (INC REFERENCES (INC REFERENCES (INC REFERENCES (INC Drawing 7220-H- SIGNATURE(S): DBT OCR ITEM REPO ORIGINATOR	CL. RELATED OCR I 639 (Q), Sh. 1 DBT RT LTR	SOLUTION y to more attent and resolution s issues and the p uations. TEM REPORT NO.): 4, Rev. 11 & En A PROJECT I FOR PROJ	g. Eval. 32	eed in conjunc hat similar e 01-001-001, p JB PRINCIPAL- IN-CHARGE 7/14/83	rcised during the ction with C-031 rrors could have

	EPENDENT DESIGN AN FINDING I	ID CONSTRUCTION VER REPORT	RIFICATION
CLASS: SAFETY X	NON-SAFETY	FILE N DOC N REV. N	10. <u>3201-008</u> 10. <u>3201-008</u> F - 036
DATES REPORTED TO: PRO	JECT TEAM/PROJECT MGR. 7/12/83 CPC/DESIGN 0	6/27/83 PRINCIPAL-IN-C	HARGE 7/12/83
STRUCTURE(S), SYSTEMS(S), AFW System, Piping	OR COMPONENT(S) INVOLVED	) <u>1</u>	
DESCRIPTION OF FINDING: Approved drawings (722 checked. Dimensional cussions with cognizar	20-H-639(Q), Sh. 14, R errors on hanger isom at Bechtel engineers.	ev. 11, 12, 13, 14) ha metric drawings were co	ave not been adequate onfirmed through dis-
systems and components noted discrepancies we and are primarily due	from design assumption buld have no impact up to inattention to det	ons, however, in this oon the piping install. ail during the drawing	specific case, the ation or design g checking process.
RECOMMENDATION: Bechtel personnel have initiated steps to es by the review team an should be considered	e become aware of the tablish corrective act d selected drawings ch in conjunction with ac	identified drawing er tion. This activity s hecked for similar err ctivities associated w	rors and have hould be monitored ors. Resolution ith C-031.
RECOMMENDATION: Bechtel personnel have initiated steps to es by the review team an should be considered	e become aware of the tablish corrective act d selected drawings ch in conjunction with ac	identified drawing er tion. This activity s hecked for similar err ctivities associated w	rors and have hould be monitored ors. Resolution ith C-031.
RECOMMENDATION: Bechtel personnel have initiated steps to es by the review team an should be considered COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT OCR 3201-008-C-036, R Eng'g Eval. 3201-001-	e become aware of the tablish corrective act d selected drawings ch in conjunction with ad UIRED): ED OCR ITEM REPORT NO.): ev. 2 Draw 001, page 9	identified drawing er tion. This activity s hecked for similar err ctivities associated w	rors and have hould be monitored ors. Resolution ith C-031. 14, Rev. 11,12,1361
REFERENCES (INCL. RELAT OCR 3201-008-C-036, R Eng'g Eval. 3201-001- SIGNATURE(S):	e become aware of the tablish corrective act d selected drawings ch in conjunction with ac UIRED): ED OCR ITEM REPORT NO.): ev. 2 Draw 001, page 9	identified drawing er tion. This activity s hecked for similar err ctivities associated w	rors and have hould be monitored ors. Resolution ith C-031. 14, Rev. 11,12,1361
RECOMMENDATION: Bechtel personnel have initiated steps to es by the review team an should be considered COMMENTS BY SRT (IF REQ COMMENTS BY SRT (IF REQ REFERENCES (INCL. RELAT OCR 3201-008-C-036, R Eng'g Eval. 3201-001- SIGNATURE(S): DT	e become aware of the tablish corrective act d selected drawings ch in conjunction with ad UIRED): ED OCR ITEM REPORT NO.): ev. 2 Draw 001, page 9 HAL HAL	identified drawing er tion. This activity s hecked for similar err ctivities associated w ing 7220-H-639(Q), Sh.	rors and have hould be monitored ors. Resolution ith C-031. 14, Rev. 11,12,1361 DKD SRT (IF REQUIRED)
REFERENCES (INCL. RELAT OCR 3201-008-C-036, R Eng'g Evai. 3201-001- SIGNATURE(S): DT FINDING REPORT ORIGINATOR (LTR)	e become aware of the tablish corrective act d selected drawings ch in conjunction with ac UIRED): ED OCR ITEM REPORT NO.): ev. 2 Draw 001, page 9 HAL PROJECT MANAGER FOR PROJECT TEAM	identified drawing er tion. This activity s hecked for similar err ctivities associated w ing 7220-H-639(Q), Sh. JB PRINCIPAL-IN-CHARGE	rors and have hould be monitored ors. Resolution ith C-031. 14, Rev. 11,12,1361 DKD SRT (IF REQUIRED) 7/11//82
REFERENCES (INCL. RELAT OCR 3201-008-C-036, R Eng'g Eval. 3201-001- SIGNATURE(S): DT FINDING REPORT ORIGINATOR (LTR) 6/27/83	e become aware of the tablish corrective act d selected drawings ch in conjunction with ad UIRED): ED OCR ITEM REPORT NO.): ev. 2 Draw 001, page 9 HAL PROJECT MANAGER FOR PROJECT TEAM 7/12/83	identified drawing er tion. This activity s hecked for similar err ctivities associated w ing 7220-H-639(Q), Sh. JB PRINCIPAL-IN-CHARGE 	rors and have hould be monitored ors. Resolution ith C-031. 14, Rev. 11,12,1361 <u>DKD</u> SRT (IF REQUIRED) <u>7/14/83</u> DATE

TYPE OF REPORT.	OPEN CON	FIRMED X	FILE NO. 32	01-008
TTPE OF REPORTS	RESOLVED	ITEM	REV. NO.	T
DATES REPORTED	TO: LTR 6/10/83 PRINCIPAL-IN-CH	SRT PRO	JECT TEAM/PROJECT MGR	. 6/15/83
STRUCTURE(S), SYS	STEM(S), OR COMPONEN	IT(S) INVOLVED:		
FW System: A	FW Pump Motor 2P0	105A		
IDCV PROGRAM AF	LA OR TASK (IF APPLI	CABLE):		
DESCRIPTION OF C	CONCERN:			
. Manufactur	er's recommended	storage instruction	s require motor sha	ft rotation 220-M14-68).
every two	weeks while motor	is in storage (ner	ce (E-10-247) requi	res rotation
<ol> <li>Bechtel pr of motor s</li> </ol>	haft every 30 day	s (which has been a	accomplished). Ware	house storage
procedure	F-1-435 only requ	ired rotation every	90 days. The vend	lor recommends
rotation e	very two (2) week	(5.		
	CONCERNI			
SIGNIFICANCE OF	CONCENT			
Failure to com	ply with manufact	turer's recommended	shaft rotation sche	dule for the
Failure to com motor may have	ply with manufact a deleterious ei	turer's recommended fort upon the shaft	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e	ply with manufact a deleterious ef lements of the mo	turer's recommended fort upon the shaft otor.	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e	ply with manufact a deleterious ef lements of the mo	turer's recommended fort upon the shaft otor.	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e	ply with manufact a deleterious ef lements of the mo	turer's recommended fort upon the shaft otor.	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e	ply with manufact a deleterious en lements of the mo	turer's recommended fort upon the shaft otor.	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e RECOMMENDATIO	nply with manufact a deleterious ef elements of the mo	turer's recommended fort upon the shaft otor.	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e RECOMMENDATIO	ply with manufact a deleterious en lements of the mo N X OR RESOLU	UTION:	shaft rotation sche bearing surfaces,	dule for the shaft bearings
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mc	ply with manufact a deleterious ef lements of the mo N X OR RESOLU- otor inspection by	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	dule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	N X OR RESOLUTION	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	dule for the shaft bearings of motor
RECOMMENDATIO	ply with manufact a deleterious ef lements of the mo N X OR RESOLU otor inspection by ces.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	dule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	ply with manufact a deleterious ef lements of the mo N X OR RESOLU otor inspection by ces.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	edule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	ply with manufact a deleterious en elements of the mo N X OR RESOLU- otor inspection by ces.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	edule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	N X OR RESOLUTION	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	dule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	nply with manufact a deleterious ef elements of the mo N X OR RESOLU otor inspection by es.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	edule for the shaft bearings of motor
RECOMMENDATIO Recommended mo bearing surfac	N X OR RESOLUTION BY	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	dule for the shaft bearings of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	nply with manufact a deleterious ef elements of the mo N X OR RESOLU otor inspection by es.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	nply with manufact a deleterious en elements of the mo N X OR RESOLU- otor inspection by ces.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surfac	nply with manufact a deleterious ef elements of the mo N X OR RESOLU otor inspection by es.	UTION: y manufacturer's rep	shaft rotation sche bearing surfaces,	of motor
REFERENCES (INC	N X OR RESOLUTION DE PROCEDURED):	The second state of the shaft o	shaft rotation sche bearing surfaces,	of motor
Failure to com motor may have and rotating e RECOMMENDATIO Recommended mo bearing surface COMMENTS BY SR REFERENCES (INC Bechtel Storag Vendor Documer	T (IF REQUIRED): T (IF REQUIRED): L. RELATED OCR ITEM performed by the model of	The second state of the shaft o	shaft rotation sche bearing surfaces,	of motor
RECOMMENDATIO Recommended mo bearing surface COMMENTS BY SR REFERENCES (INC Bechtel Storage Vendor Document SIGNATURE(S):	T (IF REQUIRED):	UTION: y manufacturer's report NO.): -247 8	shaft rotation sche bearing surfaces,	of motor
RECOMMENDATIO Recommended mo bearing surface COMMENTS BY SR REFERENCES (INC Bechtel Storage Vendor Document SIGNATURE(S): MBJ	T (IF REQUIRED):	REPORT NO.): -247 8 HAL PRO ECT MANAGES	shaft rotation sche bearing surfaces,	of motor
RECOMMENDATIO RECOMMENDATIO Recommended mo bearing surface COMMENTS BY SR REFERENCES (INC Bechtel Storag Vendor Document SIGNATURE(S): <u>MBJ</u> OCR ITEM REPOF ORIGINATOR	T (IF REQUIRED): T (IF REQUIRED): T (IF REQUIRED): T No. 7220-M14-6 DBT LTR	THE PROJECT MANAGEF	shaft rotation sche bearing surfaces,	of motor
RECOMMENDATIO RECOMMENDATIO Recommended mo bearing surface COMMENTS BY SR REFERENCES (INC Bechtel Storage Vendor Document SIGNATURE(S): <u>MBJ</u> OCR ITEM REPOR ORIGINATOR 6/9/83	T (IF REQUIRED): T (IF REQUIRED): T (IF REQUIRED): T IF REQUIRED IF REQUIRED): T IF REQUIRED IF REQUIF REQUIF IF REQUIRED IF REQUIRED IF REQUIRED IF REQU	turer's recommended         Ifort upon the shaft         otor.         UTION:         y manufacturer's report no.):         -247         8         HAL         PROJECT MANAGEF         FOR PROJECT TEAM         7/12/83	shaft rotation sche bearing surfaces,	of motor