Roy A Wells
Executive Manager
Midland Project Office

Midland Project: PO Box 1963, Midland, MI 48640 • (517) 631-8650

October 4, 1983

Mr J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND ENERGY CENTER PROJECT -
ITEMS FOR NRC CLOSURE
FILE 0.4.2 SERIAL 25261

In accordance with your request, we are submitting the attached list of items which have been reviewed by CPCo and have been determined to be ready for review and closure by the NRC. More items will be added to the list in the near future as we are continuing to place emphasis on the closure of open items.

RAW/jln

CC WRBird
DMBudzik
JWCook
RCook
JFFremeau
JHarrison
JNLeech
DBMiller
JARutgers

50.55(e) Reports Ready For Closure

NRC Number	No	Description
77-03	0.4.9.12	ITT/Grinnell Pipe Supports
78-01	0.4.9.13	RCP Motor Flange
78-06	0.4.9.18	Small Break Analysis
79-12	0.4.9.37	Unit 2 Shield Wall Coatings

REW/WRB 09/26/83

MI0983-0029B-MP01

NRC Inspection Report Items

Miscellaneous Items Ready For Closure

Item	Type	Subject	Closure location
80-09-01	Deficiency	Leveling of Internal Core Support Structure	Site
80-30/31-01	Unresolved	Battery Rack Acidic Environment	Site
81-20-03	Unresolved	Cable Tray Dividers	Site
82-05-01	Deviation	QA Staffing	Site
82-06-02	ION	Cable Pulling	Site
82-18-03/02	ION	Slope layback	Site
82-18-04/03	Unresolved	BWST Grouting	Site
82-20-01	Open	Training of RMS Personnel for Emergency Procedures and training fo crafts	Site
83-03-02	Unresolved	Expansion of Excavation Permit system to underpinning	Site

Items Dealing With Hanger Design

The following items all were initiated by I Yen, and need to be resolved by a scheduled trip to Ann Arbor with a possibility of going to ITT Grinnell in Providence.

Item	Type	Subject	Closure Location
78-19-02	URI	Locking bevices on bolts used in ITT Grinnell	Ann Arbor
78-19-03	URI	ITT Grinnell evaluation of bolt holes near edge of plate	Ann Arbor
79-01-02	URI	Adequacy of Drawing Hanger Review	Ann Arbor

Item	Type	Subject	Closure Location
79-05-02	URI	Additional reviews of ITT Hanger Design	Ann Arbor or Providence
79-05-03	URI	Bechtel system for design interface of hanger loadings on existing structures	Ann Arbor
80-11/12-01	URI	Bolted joints	Ann Arbor
82-07-01	URI	Review of other Disciplines for handling of CPDC's	Ann Arbor

REW/WRB 09/26/83

Bulletins - Circulars - Notices Ready For Closure

BULLETIN	73-01	Faulty Overcurrent Trip Delay Device in Circuit Breakers for Engineered Safety Systems
BULLETIN	74-01	Valve Deficiencies
BULLETIN	74-06	Defective Westinghouse Type W-2 Control Switch Component
BULLETIN	74-08	Deficiency in ITE Molded Case Circuit Breakers, Type HE-3
BULLETIN	74-09	Deficiency in General Electric Model 4kV Magna-Blast Breakers
BULLETIN	74-12	Incorrect Coils in Westinghouse Type SG Relays at Trojan
BULLETIN	74-15	Misapplication of Cutler-Hammer Three Positioned Maintained Switch, Model 10250T
BULLETIN	74-16	Improper Machining of Pistons in Colt Industries (Fairbanks-Morse) Diesel Generators
BULLETIN	78-12	Physical Weld Material in Reactor Pressure Vessel Welds
BULLETIN	80-16	Potential Misapplication of Rosemount, Inc Models 1151 and 1152 Pressure Transmitters with either "A" or "D" Output Codes.
BULLETIN	82-01	Alteration of Radiographs of Welds in Piping Assemblies.
BULLETIN	82-03	Stress Corrosion Cracking in Thick-Wall, Large Diameter, Stainless Steel, Recirculation System Piping at BWR Plants.
BULLETIN	82-04	Deficiencies in Primary Containment Penetration Assemblies.
BULLETIN	83-02	Stress Corrosion Cracking in Large Diameter Stainless Steel Recirculation System Piping at BWR Plants.
CIRCULAR	76-01	Crane Hoist Control Circuit Modifications
CIRCULAR	76-05	Hydraulic Shock and Sway Suppressors Maintenance of Bleed and Locking on ITT Grinnell's Model Number Figure 200 and 201 Catalog PH-74-R

CIRCULAR	81-12	Inadequate Periodic Test Procedure of PWR Protection System
CIRCULAR	81-14	Main Steam Isolation Valve Failures to Close
NOTICE	79-06	Stress Analysis of Safety-Related Piping
NOTICE	79-09	Spill of Radioactively Contaminated Resin
NOTICE	79-11	Lower Reactor Vessel Head Insulation Support Problem
NOTICE	79-12	Attempted Damage to New Fuel Assemblies
NOTICE	79-13	Indication of Low Water Level in the Oyster Creek Reactor (BWR)
NOTICE	79-16	Nuclear Incident at Three Mile Island
NOTICE	79-17	Source Holder Assembly Damage from Misfit between Assembly and Reactor Upper Grid Plate (Westinghouse Units only)
NOTICE	79-18	Skylab Reentry
NOTICE	79-28	Overloading of Structural Elements due to Pipe Support Loads
NOTICE	79-29	Loss of Nonsafety-Related Reactor Coolant System Instrumentation during Operation.
NOTICE	79-32	Separation of Electrical Cables for HPCI and ADS (BWR only)
NOTICE	79-37	Cracking in Low Pressure Turbine Discs
NOTICE	80-04	BWR Fuel Exposure in Excess of Limits
NOTICE	80-06	Notification of Significant Event and Supplement

NOTICE	80-17	Potential Hazards Associated with Interchangeable Parts on Radiographic Equipment
NOTICE	80-20	Loss of Decay Heat Removal Capability at Davis-Besse Unit I while in Refueling Mode
NOTICE	80-22	Breakdowns in Contamination Control Programs
NOTICE	80-23	Loss of Suction to Emergency Feedwater Pumps
NOTICE	80-24	Low Level Radioactive Waste Burial Criteria
NOTICE	80-25	Transportation of Pyrophoric Uranium
NOTICE	80-27	Degradation of Reactor Coolant Pump Studs
NOTICE	80-29	Broken Studs on Terry Turbine Steam Inlet Flange
NOTICE	80-30	Potential for Unacceptable Interaction between the Control Rod Drive Scram Function and Nonessential Control Air at Certain G E BWR Facilities
NOTICE	80-33	Determination of Teletherapy Timer Accuracy
NOTICE	80-35	Leaking and dislodged Iodine-125 Implant Seeds
NOTICE	80-37	Containment Cooler Leaks and Reactor Cavity Flooding at Indian Point 2
NOTICE	80-45	Potential Failure of BWR Backup Manual Scram Capability
NOTICE	81-02	Transportation of Radiography Devices
NOTICE	81-04	Cracking in Main Steam Lines
NOTICE	81-06	Failure of ITE Model K-600 Circuit Breaker

NOTICE	81-07	Potential Problem with Water Soluble Purge Dam Materials used during Inert Gas Welding
NOTICE	81-08	Repetitive Failures of Limitorque Operator SMB-4 Motor-to-Shaft Key
NOTICE	81-10	Inadvertent Containment Spray due to Personnel Error
NOTICE	81-11	Alternate Rod Insertion for BWR Scram Represents a Potential Path for Loss of Primary Coolant.
NOTICE	81-12	Guidance on Order Issued January 9, 1981, Regarding Automatic Control Rod Insertion on Low Control Air Pressure (BWR only).
NOTICE	81-13	Jammed Source Rack in a Gamma Irradiator
NOTICE	81-14	Potential Overstress of Shafts on Fisher Series 9200 Butterfly Valves with Expandle T-Rings
NOTICE	81-15	Degradation of Automatic ECCS Actuation Capability by Isolation of Instrument Lines.
NOTICE	81-16	Control Rod Drive System Malfunction (BWR only)
NOTICE	81-17	Never Issued
NOTICE	81-18	Excessive Radiation Exposure to Fingers
NOTICE	81-19	Lost Parts in Primary Coolant System
NOTICE	81-20	Test Failures of Electrical Penetration Assemblies
NOTICE	81-21	Potential Loss of Direct Access to Ultimate Heat Sink
NOTICE	81-22	Section 235 and 236 Admendments to the Atomic Energy Act of 1954

NOTICE	81-23	Fuel Assembly Damage due to Improper Positioning of Fuel Handling Equipment
NOTICE	81-24	AFW Pump Turbine Bearing Failures
NOTICE	81-26	Compilation of Health Physics Related Information Items
NOTICE	81-27	Flammable Gas Mixtures in the Waste Decay Tanks in BWR Plants.
NOTICE	81-28	Failure of Rockwell-Elward Main Steam Isolation Valves
NOTICE	81-29	Equipment Qualification Testing Experience
NOTICE	81-30	Velan Swing Check Valves
NOTICE	81-31	Failure of Safety Injection Valve to Operate Against Differential Pressure.
NOTICE	81-32	Transfer and/or Disposal of Spent Generators
NOTICE	81-33	Locking Devices Inadequately Installed on Main Steam Isolation Valves
NOTICE	81-34	Accidental Actuation of Prompt Public Notification System
NOTICE	81-35	Check Valve Failures
NOTICE	81-36	Replacement Diaphrams for Robertshaw Valve (Model No VC-210)
NOTICE	81-37	Unnecessary Radiation Exposure to Public and Workers during Events Involving Thickness and Limit Measuring Devices.
NOTICE	81-38	Potentially Significant Equipment Failures Resulting from Contamination of Air-Operated Systems
NOTICE	81-39	EPA Crosscheck Program Low-Level Radioiodine in Water Intercomparison Study

CIRCULAR	77-02	Potential Heavy Spring Flooding
CIRCULAR	77-06	Effects of Hydraulic Fluid on Electrical Cables
CIRCULAR	78-05	Inadvertent Safety Injection during Cooldown
CIRCULAR	78-13	Inoperability of Multiple Service Water Pumps
CIRCULAR	78-15	Check Valves Fail to Close in Vertical Position
CIRCULAR	79-05	Moisture Leakage in Stranded Wire Conductors
CIRCULAR	79-11	Design/Construction Interface
CIRCULAR	79-12	Potential Diesel Generator Turbocharger Problem
CIRCULAR	80-16	Operational Deficiency on Rosemount Model 510DU Trip Units and Model 1152 pressure Transmitters
CIRCULAR	80-17	Fuel Pin Damage to Water Jet from Baffle Plate Corner
CIRCULAR	80-21	Regulation of Refueling Crews
CIRCULAR	81-05	Self-Aligning Rod End Bushings for Pipe Supports
CIRCULAR	81-06	Potential Deficiency Affecting Certain Foxboro 10 to 50 Milliampere Transmitters
CIRCULAR	81-07	Control of Radioactively Contaminated Material
CIRCULAR	81-08	Foundation Materials
CIRCULAR	81-09	Containment Effluent Water Heat Bypasses Radioactivity Monitor
CIRCULAR	81-11	Inadequate Decay Heat Removal During Reactor Shutdown

NOTICE	82-01	AFW Pump Lockout Resulting from Westinghouse W-2 Switch Circuit Modification
NOTICE	82-02	Westinghouse NBFD Relay Failures in Reactor Protection Systems at Certain Nuclear Power Plants
NOTICE	82-03	Environmental Tests of Electrical Terminal Blocks
NOTICE	82-04	Potential Deficiency of Certain Agastat E-7000 Series Time Delay Relays
NOTICE	82-05	Increasing Frequency of Drug-Related Incidents
NOTICE	82-07	Inadequate Security Screening Programs
NOTICE	82-09	Cracking in Makeup Coolant Lines at B&W Plants
NOTICE	82-10	Following Up Symptomatic Repairs to Assure Resolution of the Problem
NOTICE	82-11	Potential Inaccuracies in Wide Range Pressure Instruments Used in Westinghouse Designed Plants
NOTICE	82-12	Surveillance of Hydraulic Snubbers
NOTICE	82-13	Failure of General Electric Type HFA Relays
NOTICE	82-15	Notification of Nuclear Regulatory Commission (NRC)
NOTICE	82-16	HPCI/RCIC High Steam Flow Set Points
NOTICE	82-18	Assessment of Intakes of Radioactive Materials by Workers
NOTICE	82-19	Loss of High Head Safety Injection Emergency Boration and Reactor Coolant Makeup Capability
NOTICE	82-20	Check Valve Problems

NOTICE	82-21	Buildup of Enriched Uranium in Effluent Treatment Tanks
NOTICE	82-22	Failures in Turbine Exhaust Lines
NOTICE	82-23	Main Steam Isolation Valve Leakage
NOTICE	82-24	Water Leakage from Uranium Hexafloride Overpacks
NOTICE	82-26	RCIC and HPCI Turbine Exhaust Check Valve Failure (BWR only)
NOTICE	82-27	Fuel Rod Degradation Resulting from Water-Jet Baffle Impingement
NOTICE	82-28	Hydrogen Explosion while Grinding in Vicinity of Drained and Open RCS
NOTICE	82-29	Control Rod Drive (CRD) Guide Tube Support Pin Failures at Westinghouse PWR (Westinghouse Plants only)
NOTICE	82-30	Loss of Thermal Sleeves in RCS Piping at Certain Westinghouse PWR Plants
NOTICE	82-31	Overexposure of Diver during Work in Fuel Storage Pool
NOTICE	82-33	Control of Radiation Levels in Unrestricted Areas Adjacent to Brachytherapy Patients (Medical Institutions only)
NOTICE	82-35	Failures of Three Check Valves on HPI Lines to Pass Flow
NOTICE	82-36	Respirator Users Warning for Certain 5-Minute Emergency Escape Self-Contained Breathing Apparatus
NOTICE	82-37	Cracking in the Upper Shell to Transition Cone Girth Weld of a Steam Generator on an Operating PWR
NOTICE	82-38	Change in Format and Distribution System for IE Bulletins, Circulars and Information Notices

NOTICE	82-39	Service Degradation of Thick Wall Stainless Steel Recirculation System Piping at BWRs
NOTICE	82-40	Deficiencies in Primary Containment Electrical Penetration Assemblies
NOTICE	82-41	Failure of Safety Relief Valve to Open at a BWR
NOTICE	82-42	Defects Observed in Panasonic Model 801 and Model 802 Thermoluminiscent Dosimeters
NOTICE	82-43	Deficiencies in LWR Air Filtration/Ventilation Systems
NOTICE	82-44	Clarification of Emergency Plan Exercise Requirements
NOTICE	82-45	PWR Low Temperature Overpressure Protection
NOTICE	82-46	Defective and Obsolete Combination Padlocks
NOTICE	82-51	Overexposure in PWR Cavities
NOTICE	82-52	Equipment Environmental Qualification Testing Experience - Update of Test Summaries Previously Issued in IN 81-29
NOTICE	82-54	Westinghouse NBFD Relay Failures in Reactor Protection Systems
NOTICE	82-55	Seismic Qualification of Westinghouse AR Relay with Latch Attachment used in Westinghouse Solid-State Protection System.
NOTICE	83-01	Ray Miller, Inc.
NOTICE	83-07	Nonconformities with Materials Supplied by Tube-Line Corp
NOTICE	83-09	Safety and Security of Irradiators
NOTICE	83-12	Incorrect Boron Standards

NOTICE	83-13	Design Misapplication of Bergen Patterson Standard Strut Restraints
NOTICE	83-14	Dewatered Spent Ion Exchange Resin Susceptability to Exothermic Chemical Reaction
NOTICE	83-15	Falsified Pre-Employment Screening Records
NOTICE	83-16	Contamination of Auburn Steel Company with Cobalt-60
NOTICE	83-20	ITT Grinnel Figure 306/307 Mechanical Snubber Attachment Interferences
NOTICE	83-21	Defective Emergency Use Respirators
NOTICE	83-22	BWR Safety/Relief Valve Failures
NOTICE	83-26	Failure of Safety/Relief Valve Discharge Line Vacuum Breakers
NOTICE	83-29	Fuel Binding Caused by Fuel Rack Deformation
NOTICE	83-32	Rupture of Americium-241 Source(s) Contained in Well Logging Device
NOTICE	83-34	Event Notification Information Worksheet
NOTICE	83-35	Fuel Movement with Control Rods Withdrawn
NOTICE	83-37	Transformer Failure Resulting from Degraded Internal Connection Cables
NOTICE	83-39	Failure of Safety/Relief Valves to Open at a BWR - Interim Report
NOTICE	83-42	Reactor Mode Switch Malfunction
NOTICE	83-44	Potential Damage to Redundant Safety Equipment as a Result of Backflow through the Equipment and Floor Drain System
NOTICE	83-52	Radioactive Waste Gas System Events

NOTICE	83-53	Primary Containment Isolation Valve Discrepancies
NOTICE	83-54	Common Mode Failure of Main Steam Isolation Nonreturn Check Valves
NOTICE	83-55	Misapplication of Valves by Throttling beyond Design Range
NOTICE	83-59	Dose Assignment for Workers in Non-Uniform Radiation Fields
NOTICE	83-60	Falsification of Test Results for Protection Coatings
NOTICE	83-61	Alleged Use of Stand-Ins for Welder Qualification Tests
NOTICE	83-62	Failure of Redundant Toxic Gas Detectors Positioned at Control Room Ventilation Air Intakes
NOTICE	83-63	Potential Failure of Westinghouse Electric Corp Type SA-1 Differential Relays
NOTICE	83-64	Lead Shielding Attached to Safety-Related Systems without 10CFR50.59 Evaluations
NOTICE	83-66	Fatality at Argentine Critical Facility
NOTICE	83-67	Emergency Use Respirator Material Defect Causes Production of Noxious Gases
NOTICE	83-68	Respirator User Warning - Defective Self-Contained Breathing Apparatus Air Cylinders
NOTICE	83-73	Radiation Exposure from Gloves Contaminated with Uranium Daughter Products.
NOTICE	83-74	Rupture of Cesium-137 Source used in Well-Logging Operations
NOTICE	83-80	Use of Specialized "Stiff" Pipe Clamps
NOTICE	83-82	Failure of Safety Relief Valves to Open at BWR - Formal Report

NOTICE 83-84 Cracked and Broken Piston Rods in Brown Boveri Electric Type 5HK Circuit Breakers

Ghosts from the Past!

Consumers Power Company
QA69-1

SAFETY CONCERN AND REPORTABILITY EVALUATION

PROJECTS, ENGINEERING AND CONSTRUCTION - QUALITY ASSURANCE DEPARTMENT

4. HOW WAS CONCERN IDENTIFIED, WHEN, WHERE?

Test Engineers identified differences between hardware configuration and the technical documents in turnover packages during turnover and testing activities. The differences include set point revisions, relocated hangers, lack of implementation of earlier design change packages (DCP) revisions when there were subsequent revisions to the DCP(s).

~~(CONTINUE ON NEXT PAGE)~~

TO MANAGER-MPQA

1. FROM: REMcCue
ORGANIZATION: CPCo Testing

SCRE NO: 79
FILE NO: 15.1
DATE RECEIVED: 2/4/83

2. IS CONCERN A PART 21?
☐ YES ☒ NO
WHEN?
BY WHOM?

3. IS NRC AWARE OF THIS?
☐ YES ☒ NO
WHEN?
BY WHOM?

5. BRIEF DESCRIPTION OF CONCERN - SYSTEM, COMPONENT, ACTIVITY, POSSIBLE SAFETY IMPACT - (ATTACH SUPPORTING DOCUMENTS).

The apparent lack of design control and subsequent difference in configuration between the hardware and what the Test Engineers base their testing on causes an indeterminacy as to the effect of the testing on the hardware. Some hardware revisions may not have ~~even~~ been implemented which would cause the hardware to be different than the design which is the basis for licensing. A detailed evaluation of the specifics is required to determine if any represent conditions which could cause a safety problem. The lack of design control is considered a significant breakdown in the QA Program. NCR M01-9-3-037 is being issued to document specific deficencies.

~~(CONTINUE ON NEXT PAGE)~~

6. IMMEDIATE REPORTABILITY EVALUATION:
a. ☐ REPORTABLE - GO TO 13
b. ☐ POTENTIALLY REPORTABLE - GO TO 13
c. ☒ NOT REPORTABLE, FURTHER EVALUATION
d. ☐ NOT REPORTABLE

7. ORGANIZATION REPONSIBLE FOR FURTHER EVALUATION/Response Due Date:
Project Engineering/Testing 2/28/83

8. FINAL REPORTABILITY EVALUATION (IF 6.c. CHECKED):
a. ☐ REPORTABLE b. ☐ NOT REPORTABLE

9. QA APPROVAL OF EVALUATION OF BLOCKS 1 TO 7: SIGNATURE, MANAGER, MPQAD DATE:

10. JUSTIFICATION OF EVALUATION - (ATTACH SUPPORTING DOCUMENTS)

There is not evidence that any of the specific items identified to date would have caused systems to not function according to their design requirements, nor has it been established the extent that the conditions apply to systems other than those currently identified.

~~(CONTINUE ON NEXT PAGE)~~

11. FINAL QA APPROVAL SIGNATURE, MANAGER, MPQAD DATE/TIME

12. NRC NOTIFICATION: HOW? DATE: TIME:
INDIVIDUAL NOTIFIED:
REFERENCE:

4. CONTINUED

5. CONTINUED

10. CONTINUED

14. MINIMUM DISTRIBUTION:

VICE PRESIDENT - PE&C JWCook
DIRECTOR - E&QA BWMarguglio
MIDLAND SITE MANAGER DBMiller
MIDLAND PROJECT MANAGER GSKeeley
MANAGER - SAFETY & LICENSING P-24-624A
GROUP SUPERVISOR - ADMINISTRATION JAHorsch
MIDLAND FILE NO. 16.0

15. ADDITIONAL DISTRIBUTION:

MLCurland, Midland
LHCurtis, Bechtel - AA
MADietrich, Bechtel - AA
JAHorsch, Midland
EMHughes, Bechtel - AA
GSKeeley, P-14-113B
P-24-624A
RJCook, NRC Site
BWMarguglio, JSC-220A
REMcCue, CPCo Testing
JMilanden, Bechtel-Mid
DBMiller, CPCo Test
ROrosz, CPCo Testing
GRichardson, Bechtel-AA
JARutgers, Bechtel-AA
RAWells, Midland
GBSlade, Midland
RASeba, Midland

B+W training program was "watered down" to make it look like Bechtels training program which is minimally (if that) acceptable for other than QC/QA people.

Can't have a B+W program & be superior to a Bechtel program — it might cause Bechtel to have to up grade and all those lost man hours!

GUIDELINES ON B&WCC HANGER INSTALLATION

1) Purchased hanger parts such as spring cans, mechanical suppressors, bolts, pipe clamps, and sway struts are not required to be physically identifiable to a particular hanger. Traceability is established through proper documentation which denotes the requirement for the particular manufacturers model/part, etc.

2) During BWCC receipt inspection of hangers, there is no requirement to check dimensions. On a random basis, some hangers are dimensionally checked at receipt inspection.

3. Although there is an effort to make all installed hangers physically identifiable, BWCC does not rely on observed markings for identifying hangers. Their policies and procedures only require that installed hangers be identifiable and traceable through review of proper documentation.

4. At times BWCC is authorized via the Bechtel design drawing to field cut hanger parts. This event will only be recorded in the Field Construction Procedure (FCP) if it is required to transfer the I.D. stamp from the scrap part which was cut off to the remaining part to

be installed.

5. During the receipt inspection process at warehouse no. 2, Bechtel does not do a dimension check on hangers received from Standish.

604-1-24

(1) NCR ON SHOCK (4) TIMES
(2) SHIPPED SHOCK & TUBE STEEL
(3) RETAINED SHOCK (REPLACEMENT SENT)
(4) NO PAPER TO GET RID OF RETAINED SHOCK

611-1-43 - PAPER MISFILE?? FOUND ~15 MIN

(1) STRAY STRUT & 14" PIPE CLAMP RETAINED
(2) SHIPPED EXTENSION FOR SHOCK
(3) OLD PART RETAINED

57-1-H2

(1) SHIPPED SHOCK 10.2.82
(2) RETAINED ANGLE & PLATE
(3) RELEASED ON SEPARATE PIECES ON SEPARATE DATES
(4) 1/3 PARTS SHIPP

604-2-60

(1) HANGER SHIPPED COMPLETE 10.16.82
(2) PARTS RELEASED ON SEPARATE DATES
(3) CLAMP, ALL THREAD, WELDLESS EYE NUT RETAINED. EXCESS MATERIAL. NO PAPER TO MOVE

602-2-501

(1) DESIGN CHANGE, MATERIAL FABRICATED
(2) SHIPPED 10 DIFFERENT ITEMS STEEL & PLATES
(3) RETAINED TWO PLATES FOR CHANGES

56-1-H11 (1) SHIPPED PLATES, BOLTS
(2) RETAINED 1" PIPE STRAP

602-1-H3 (1) REPLACEMENT SHOCK REVISED CAST SHOWN
(2) DELETED SHOCK IN STOCK, SCRAP
(3) REPLACEMENT STUDS REVISED & SHIPPED 2-10-87

2D-SD4-1-H4 (1) SHIPPED 11-1982

Memo from: BRUCE PECK

To: Ron Cook / Bruce Burgess
USNRC

You asked me for some info about the NCR review board a few weeks back. Attached is a letter describing the program.

Bruce
2-21

Midland Project: PO Box 1963, Midland, MI 48640 • (517) 631-8650

February 22, 1984

Mr R A Wells
Consumers Power Company
PO Box 1963
Midland, MI 48640

MIDLAND ENERGY CENTER PROJECT - FINAL REPORT, NCR REVIEW BOARD PILOT PROGRAM
FILE 16.0 SERIAL 27317

Reference (A): R A Wells letter to D L Quamme and J A Rutgers dated 12/23/83,
Subject: Pilot program for NCR Review Board

The Nonconformance Report Pilot Review Board (Electrical and Instrumentation & Controls) has completed evaluation of the Nonconformance Reporting System presently implemented in accordance with MPQAD Procedure Number F-2M, Rev 6 Control of Nonconforming Items and the sub tier procedures of the organizations represented on the Pilot Board.

The Pilot Board review revealed that the existing Procedure (F-2M Rev 6) and forms are complex and require a process that is not conducive to expeditiously obtaining a disposition. The existing process requires floating a copy of the Nonconformance Report (NCR) between the involved organizations signatory authorities to coordinate and finally resolve the proposed NCR disposition, transferring the agreed upon disposition to the NCR original, and then floating the original NCR for final signature approval. This practice precludes the timely disposition of a NCR. There appears to be a greater effort (manpower) in tracking the NCR document than in resolving the nonconformance. Some information required on the form is unnecessary, while other key information which would allow precise location of the item, is omitted; nor does it provide adequate space to document all the nonconformances and dispositions or accommodate a revision process.

Utilizing a preliminary Pilot Board Procedure and operating off line, a philosophy and a procedure was developed which was used to determine the total processing of a NCR from initiation, through disposition and closure. The NCR procedural concepts as defined, are similar to those used on other projects where the process proved to be very successful.

The Pilot Board processed seventeen (17) NCRs through the Board, the process proved to be very viable and should be adaptable to all disciplines. During the pilot phase several discontinuities were detected, eg: in some cases the

NCR nonconformance information was not specific enough to provide a clear understanding of the deficiencies, the specifications were misinterpreted by the users, the specifications were not specific enough to preclude misinterpretation, or the incorrect specification criteria was referenced and utilized incorrectly.

The processing of a Field Change Request (FCR) for each nonconformance is unnecessary. The MPQAD QUAIL system NCR status is not current, due to built in delays in the numerous logs and tracking systems presently being utilized and lack of communication, and constant transfer of responsibilities. Also, surprisingly the members of the Pilot Board were not knowledgeable of the available information in QUAIL, nor the designated personnel to contact for reports. Project personnel need to be made aware of the availability and capabilities of the QUAIL system.

Based on the results of the Pilot Review Board, it was determined unanimously that the program was an unqualified success (major improvement over the existing system) and a consensus goal was determined to be that:

1) An approved disposition to Nonconformance Reports can be provided within five (5) days after validation of the NCR for 90% of the NCR's initiated. (Based on manpower availability and priority.)

2) After the completion of the corrective action, NCR closure can occur within three (3) days.

The Pilot NCR Review Board members recommend the following immediate, near term and long term recommendations be implemented by the affected organizations.

A) Immediate Recommendations (Within two (2) weeks)

- Hold the pending revision to MPQAD Procedure F-2M Rev 7, issue Deviation Notice against F-2M, Rev 6 (attached) to allow the NCR Review Board to disposition the NCRs.

- Set up four Discipline NCR Review Boards (Civil/Structural, Mechanical, Electrical and Instrumentation & Control).

- Each Board composite membership to consist of CP Co Engineering Chairman, Project Field Engineering, Project Engineering and MPQAD representative, with attendance as required by Authorized Nuclear Inspector (ANI), BPCo PQAE and PFQCE (for Code items) and CP Co SMO (for systems turned over).

- For "Use as is" and "repair" dispositions, the Lead Design Organization identify on the NCR, or on an approved design document (DCN, IDCN, SCN or Drawing for physical design feature or material changes) which references the NCR, the specific design calculations, including revisions, or other engineering rationale that justify or support NCR disposition.

- NCR dispositions requiring a design document change due to a physical design feature or material change, will be approved based on receipt of an "information only" copy of the Lead Design Organization approved change.

- Manager of each organization represented on the NCR Review Board, will provide a letter to the Executive Manager MPQAD, which designates their representative/alternate with signature authority.

- Manager of each organization represented on the NCR Review Board will identify within their organization, those personnel with a primary responsibility for technical support of their board member.

- Provide space and facilities suitable for a minimum of four (4) NCR Review Boards and the Clerical Support Staff. (Recommend approximately 1,000 square feet in Support Service Building, or a trailer adjacent to the Support Services Building.)

- Provide a dedicated Clerical Support Staff reporting administratively to MPQAD Quality Services Division (1 Supervisor, 2 Clerk Typists and 2 Computer Terminal Operators).

- Provide four (4) fire proof cabinets (lockable) for retention of the NCR originals.

- Transfer the existing undispositioned NCR originals to the Clerical Support Staff.

- Provide training of the NCR Review Board members by the NCR Pilot Board members.

- Use CP Co Engineering's, user friendly computer as an interim means for tracking NCRs and reporting status, until the tracking system, board operating reports, and management reports are available from QUAIL (approximately 4 weeks to reprogram format on QUAIL).

B) Near Term Recommendations (within one month)

- Supercede MPQAD Procedure F-2M, Rev 6 "Control of Nonconforming Items" with the proposed Pilot NCR Review Board procedure.

- Provide facilities and equipment to support the Board concept (2 computer terminals, 1 printer, and 1 xerox machine).

- Request BPCo Project Quality Assurance Manager to review the NCR Board concept, and revise the Project BQAM Manual (2 paragraphs) to allow removal of the need for the BPCo PFQCE and PQAE to concur with Board action on ASME Code items. Monitoring or surveillance and auditing only, is recommended.

- Implement the QUAIL Tracking System after receipt of specific program definition and format.

- Change the following Project Procedures to accommodate the NCR Review Board concept and the recommended new Procedure F-2M. (Identified to date.)

  Field Engineering - FIG-1.510 Rev 3 NCR Dispositioning
  Project Engineering - PEP Number 4.61.0 Rev 0, Nonconformance Reporting
  MPQAD Procedure A-2M Rev 1, MPQAD Document Distribution List
  MPQAD Procedure M-6, Quality Action Item List (QUAIL)
  MPQAD Procedure N-3, Quality Verification Organization Responsibilities
  BPCo-BQ-TOP-1 Section 15, Nonconforming Items

- Train Quality Control Engineers - Program proposed revision is not drastic in the QCE area of responsibility. Recommend read list or facilitated training program with approximate duration of one hour for a large number of personnel.

- Transfer all existing open NCR originals to the Clerical Support Staff, after the QUAIL program is on line.

- Develop Administrative Guides for NCR Review Board and Support Group functions.

C) Long Term Recommendations (start within two months)

- Generate additional "standard repairs" for incorporation into the specifications and/or project field procedures which include specified standard repairs, with approval by the Lead Design Organization.

- Provide the latitude in MPQAD Procedure F-2M to allow a field disposition of obvious rework or standard repair by the Project Field Engineer and MPQAD Quality Control Discipline Supervisor.

- Identify the criteria or lack of definition and/or workmanship standards which can be modified or improved, to preclude un-warranted NCRs.

The recommendations included in this NCR Pilot Review Board Final Report, will improve the efficiency and effectiveness of the program and the Project's public and regulatory image. The efficiencies will affect an immediate measurable, monetary and time improvement.

D J Harris

D J Harris, Chairman
NCR Pilot Review Board
Midland Project QA Department

CC DRAnderson, Bechtel-Midland
JAnderson, Bechtel-Midland
DCaverly, Midland
JTChristy, Midland
MADietrich, Bechtel-Midland
WJFriedrich, Midland
CFugate, Bechtel-Midland
EGoold, Midland
RGummaraju, Bechtel-Midland
DKramer, Bechtel-Midland
NJLeech, P-24-507
HPLeonard, Midland
REMcCue, Midland
TMinor, Midland
BMNovak, Midland
DParker, Midland
GEParker, Midland
JAPastor, Midland
BHPeck, Midland
DPerry, Midland
EBPoser, Bechtel-AA
DLQuamme, Midland
JRowe, Midland
DScott, Bechtel-Midland
DDSimpson, Bechtel-Midland
DATaggart, Midland
RLTeuteberg, P-24-505
FThomas, Bechtel-Midland
TValenzano, Bechtel-Midland
GDWarner, Bechtel-Midland
JLWood, Midland
LZwissler, Midland

Consumers Power Company

MIDLAND PROJECT
QUALITY ASSURANCE
DEPARTMENT PROCEDURE

DEVIATION REQUEST No. _____

PROC NO F-2M
PAGE 467 OF 88
REVISION 6
DATE

INSTRUCTIONS

Upon receipt of controlled copies of this Deviation Request, copyholders should reference the Deviation Request number in the right-hand margin next to the affected procedure section(s). EXAMPLE: See DR No. XXX.

1. Established Requirement:

Section 4.0
Section 5.1.8

2. Deviation:

See attached sheet(s)

3. Reason for Request:

NCR Review Board recognition for balance of plant, except Remedial Soils and HVAC.

4. Period of Deviation Effectivity:

5. Requested by:	6. Approved – Bechtel PQAE	7. Approved – Executive Manager/Manager	8. Approved – Director, E&QA

2. DEVIATION: Add to read:

4.9 NCR Review Board:

The Board consists of representatives from Project Field Engineering (PFE), Lead Design Organization Project Engineering (PE), CP Co Site Management Office (SMO), as required. CP Co Engineering, and MPQAD Quality Assurance and Quality Control. The Chairman or the Board is the Site CP Co Engineering representative. The Board ensures the review and disposition of all NCRs, then approves the disposition.

The Board shall receive the concurrance of the Authorized Nuclear Inspector (ANI) for all NCR disposition related to ASME code material, items, components or systems. The NCR Review Board obtains technical support as required from the organizations represented on the Board.

4.9.1 The Manager of each organization represented on the NCR Review Board will provide a letter to the Executive Manager, MPQAD, which designates their representative/alternate with signature authority. This appointment certifies that the named representative is qualified to perform the activities in his discipline associated with the Nonconformance Review Board operation.

2. DEVIATION: Delete 5.1.7

2. DEVIATION: Change to read:

5.1.8 The NCR Review Board shall:

Evaluate NCR documented deficiencies for

a. Validity of the nonconformance. If not valid, void the NCR and/or deficiency attribute in accordance with Attachment 7.5.

b. If necessary, initiate process corrective action by preparing a Quality Action Request in accordance with Reference 3.2b.

c. Propose and approve dispositions of those deficiencies classified as "use-as-is", repair, rework, reject/replace and/or standard repair within the latitude of an approved docuemnt.

NOTE: For "Use-as-is" and "Repair" dispositions, the NCR Review Board shall ensure that the Lead Design Organization identifies on the NCR or on an approved document (For example, a Design Change Notice which references the NCR, the specific design calculations, including revision, or other engineering rationale that justify or support the disposition.

d. Assign the disposition responsibility, e.g.: Project Engineering (PE) and Project Field Engineering (PFE). Each member is assigned the responsibility for coordinating with their organizational Technical Staff to develop an appropriate disposition for submittal to the Board for review and approval.

2. DEVIATION: Change to read:

5.1.8.1 The Board may request attendance from the Authorized Nuclear Inspector (ANI), CP Co Engineering, CP Co SMO, Bechtel Project Quality Assurance Engineer (PQAE), and Project Field Quality Control Engineer (PFQCE). The Board will review for concurrence, transfer disposition to the original NCR, sign and date, indicating their approval. The following signatures are required in block 34 of the NCR for:

	MPQAD	Project Field Engr.	Proj. Engr. Lead Design Org.	CP Co SMO (Turn-Over Items)	ANI-PFQCE-PQA (ASME Code Ite
Void	X	X	X	X	X
Rework	X	X		X	X
Std. Repair	X	X		X	X
Repair	X	X	X	X	X
REject/Replace	X	X		X	X
Use As Is	X		X	X	X

5.1.8.2 The NCR Review Board shall forward a copy of the dispositioned NCR to the NCR Reviewer and retain the original NCR until closure by the assigned inspector as per 5.1.13.

CONTROL OF NONCONFORMING ITEMS

2. DEVIATION: Change to Read

B. TO BE COMPLETED BY THE NCR REVIEWER

22. The person responsible for review of the NCR shall evaluate the nonconformance for potential 50.55(e) reportability and indicate whether or not the nonconformance potentially must be reported to the NRC.

23. Indicate that person reviewing NCR personally made oral report to MPQAD Manager and date.

24. Indicate QUAIL Action Item Number.

25. Indicate the Discipline Code.

26. Indicate the Item Priority Code Number.

27. Indicate the Trend Code.

28. NCR Reviewer signs and dates here.

C. TO BE COMPLETED BY THE NCR REVIEW BOARD

29. Indicate the cause of the nonconformance.

30. Indicate the need to initiate process corrective action including QAR number.

31. Indicate the recommended disposition.

33. Indicate the distribution of the NCR required to implement the disposition.

34. Indicate required disposition concurrence signatures and dates.

D. TO BE COMPLETED BY THE ACTION ORGANIZATION

32. Indicate the need for a Conditional Release.

35. Indicate the disposition action(s) that are implemented.

E. TO BE COMPLETED BY THE ASSIGNED INSPECTOR

36. Indicate the method used to verify the implementation of the disposition and the results. If unacceptable, indicate the number of the superceding NCR. Reference the PQCI, PIP or other document used for the verification.

37. Indicate the signature and date of the individual closing the NCR. The ANI signature is required for ASME items.

~~Re~~ Pertains to the "Big-4" alliance -

1) No leader designated - Lead by H. Leonard.

2) The recommendations of the NCR review board went out - negated by "alliance" when Roy Wells left site on vacation. Don't know if the recommendations got re-incorporated or not. Mow Cullard may have some more of story.

RP 9915

REQUEST FOR APPROVAL FOR USE OF PRIVATELY OWNED VEHICLE OR RENTAL CAR FROM THE OFFICE OR FROM HOME FOR OFFICIAL BUSINESS

NAME: _____ DATES OF TRAVEL: _____

DESTINATION: _____ PURPOSE: _____

POINT OF DEPARTURE: OFFICE: _____ (CITY) RESIDENCE: _____ (CITY)

☐ APPROVAL IS REQUESTED FOR USE OF PRIVATELY OWNED VEHICLE FOR TRAVEL IDENTIFIED ABOVE IN LIEU OF TRANSPORTATION BY:

- ☐ COMMON CARRIER (AIR, RAIL, BUS)
- ☐ GOVERNMENT-OWNED AUTOMOBILE

I UNDERSTAND THE REIMBURSEMENT WILL BE ON THE FOLLOWING BASIS:

- ☐ MILEAGE RATE 20¢ PER MILE BUT LIMITED TO THE COST OF TRAVEL BY COMMON CARRIER
- ☐ MILEAGE RATE 20¢ PER MILE WHICH IS LESS COSTLY THAN TRAVEL BY COMMON CARRIER AND RENTAL CAR/LIMO
- ☐ MILEAGE RATE 20¢ PER MILE - PRIVATELY OWNED VEHICLE IS ADVANTAGEOUS TO THE GOVERNMENT BECAUSE: _____

  _____

  _____
- ☐ MILEAGE RATE 16.5¢ PER MILE - GOA IS AVAILABLE; USE OF POA IS PREFERRED

☐ APPROVAL IS REQUESTED FOR USE OF RENTAL CAR IN LIEU OF GOA BECAUSE:

- ☐ GOA IS NOT AVAILABLE
- ☐ OTHER _____ (STATE REASON) .

_____ (SIGNATURE OF TRAVELER)

_____ (DATE)

APPROVED _____ (SECTION/BRANCH CHIEF)

REV. 3/82

THIS FORM MUST BE SUBMITTED BEFORE OFFICIAL TRAVEL BEGINS

EXHIBIT B

This NCR indicates that the licensee cannot possibly know where underground pipes are located. No wonder that the diverters people keep hitting pipes and conduits.

OK to Telecopy ✓

DELETED HAND CARRY TO M.C. ROTHWELL

NONCONFORMANCE REPORT

1. PROJECT NAME: MIDLAND	JOB NO.: 7220					19. NO. 939	20. PAGE 1 OF 2
2. UNIT(S): 1+2	3. DRAWING/PART NO.: ISO. DWG NO. M169	REV: 11/14	4. ITEM DESCRIPTION: SEE BLOCK #16 BELOW			5. ITEM LOCATION: 5' NORTH OF SERVICE WATER PUMP STRUCTURE.	
6. P.O. OR SPEC NO.: M214 REV	7. SERIAL NO.: N/A	8. REPLACEMENT PART P/N N/A REV ____ SER NO. ____		9. SOURCE: CONSTRUCTION	10. CONTRACTOR/SUPPLIER: N/A		
11. INSPECTION CRITERIA (X) DWG (X) SPEC ( ) OTHER — IR NO. P1 10 M169 NO. M214 REV 1		12. ASME AUTHORIZED INSPECTION REQ'D (X) YES ( ) NO	13. SKETCH ATTACHED ( ) YES (X) NO	14. Discovered During ( ) Rec'g (X) Const ( ) Test	15. Equip Furnished By ( ) Client (X) Eng ( ) FLD		

16. NONCONFORMING CONDITION: SPECIFICATION NO. M214 REV 1, PARA 4.8 STATES IN PART; "FOR PIPING 2½ INCHES IN SIZE AND LARGER AND NUCLEAR CLASS 1 SMALL PIPING: A PIPE SPOOL OR ANY PART OF THE SYSTEM MAY VARY FROM DESIGN POSITION UP TO A MAXIMUM OF 2 INCHES IN NORTH-SOUTH AND EAST-WEST DIRECTION AND IN ELEVATION, RELATIVE TO THE PLANT TOLERANCE BASE LINES AND ELEVATION. (SEE PAGE 2)

17. REPORTED BY	DATE	18. VALIDATED BY	DATE
C Hoot	9-8-77	W.E. Barclay	9-8-77

24. DISPOSITION CONCURRENCE

rework	reject	repair	use as is
			XX

C Hoot 9-28-77 — PROJECT FIELD ENGINEER — DATE

PROJECT ENGINEER — DATE

W.E. Barclay 9-28-77 — PROJ CONSTR QC ENGINEER — DATE

AUTHORIZED INSPECTOR — DATE 9/29/77

25. DISPOSITION RESULTS

21. ROUTING: (X) TO FIELD ENGINEERING ( ) TO OTHERS (SPECIFY)

22. ( ) Field Engineering Disposition (X) Field Engineering Recommended Disposition to Project Engineering

DISPOSITION REQUIRED BY 9-12-77

USE AS IS. FIELD ENGINEERING RECOMMENDS THAT THE 2" INSTALLATION TOLERANCE BE WAIVED FOR THE CONDITION NOTED IN BLOCK 16 ABOVE.

A.M. Early 9-9-77

K. Pulito 9-9-77

23. PROJECT ENGINEERING DISPOSITION "USE AS IS" Specification M-214 is applicable mainly to prefabricated piping installed inside of buildings. In this case, (lines #53 and #54 are field assembled, underground piping), the deviation from the allowable tolerances in design position does not adversely affect the performance. Therefore, the tolerance requirements for the subject piping are relaxed as required. Dwg. M-169 will not be revised.

Masayed - 9-14-77

28. QC ACCEPTANCE — QC ENGINEER — DATE 9-28-77

AUTHORIZED INSPECTOR — DATE 10-4-77

BECHTEL

NONCONFORMANCE REPORT (CONT'D) PAGE 2 OF 2 NCR NO. 939

CONTRARY TO THE ABOVE, LINE #53 AND #54 ARE LOCATED AS PER THE FOLLOWING;

(A) LINE #53 IS approx. 45 INCHES FROM CENTER OF PIPE TO SURVEY Hub, WHICH IS 7 INCHES MORE THAN THE MAXIMUM ALLOWED.

(B) LINE #54 IS APPROX. 25 INCHES FROM CENTER OF PIPE TO SURVEY HUB, WHICH IS 9 INCHES LESS THAN THE ALLOWED.

BOTH PIPE RUNS SHOULD BE 36 INCHES FROM EACH PIPE CENTER TO SURVEY HUB, AND SHOULD HAVE A MEASURMENT OF 6 FEET FROM CENTER TO CENTER OF PIPE SPOOLS. THE MEASURMENT TAKEN FROM PIPE TO PIPE CENTERS, (EAST OF FW'S #99 AND #2) ON DWG M167 REVISED. GIVES A READING OF 66 INCHES, WHICH IS 6 INCHES LESS THAN ALLOWED.

HOLD PENDING FINAL DISPOSITION: two HOLD TAGS APPLIED.

Q-LIST NO. 9.18.5

FIELD REQUESTS CONDITIONAL RELEASE TO INSTALL ADDITIONAL PORTIONS OF THE PIPING WHICH ARE WITHIN SPECIFICATION LIMITS AS REGARDS PLAN LOCATION. CONDITIONAL RELEASE IS REQUESTED UP TO THE POINT OF HYDRO TEST. PIPING IS RETRIEVABLE.

A.P. Boon 9/9/77
PE DATE

D.L. Richardson 9/9/77
LGAE DATE

J.S. Barclay 9-9-77
PCQE DATE

G.W. Odom 9-9-77
A.I. DATE

10098-2

QC-G1-3

White Copy – Originator
Canary Copy – Field Engineer
Pink Copy – PQAE
Goldenrod Copy – QC

Here they made 2 penetrations in the liner plate sheets, a 12" and a 16". However they were omitted on to the location of the penetrations and they decided to simply re-route the pipe to the different holes.

QUESTION: These are pretty big pipes. What are they for? Does re-routing them in any way the integrity of the system. Are they pipe

NONCONFORMANCE REPORT

To A.A. 10-19-77

1. Project Name: Midland	Job No.: 7220			19. No. 981	20. Page 1 of 1
2. Unit(s): Cont. 2	3. Drawing/Part No.: C-615	Rev: 10	4. Item Description: Penetrations 2Z-15 & 2Z-18	5. Item Location: Cont. 2	
6. P.O. Or Spec No.: NA	7. Serial No.: NA	8. Replacement Part P/N NA REV ___ SER NO. ___	9. Source: Construction	10. Contractor/Supplier: NA	
11. Inspection Criteria ☒ DWG ☐ SPEC ☐ OTHER IR NO. N/A NO. C-615		12. ASME AUTHORIZED INSPECTION REQ'D ☐ YES ☒ NO	13. SKETCH ATTACHED ☐ YES ☒ NO	14. Discovered During ☐ REC'G ☒ CONST ☐ TEST	15. Equip Furnished By ☐ CLIENT ☐ ENG ☐ FLD

16. Nonconforming Condition: During fabrication of liner plate sheets for Unit #2, two penetration assembly positions were interchanged. As a result penetration 2Z-15 is a 16" ø sleeve and 2Z-18 is a 12" ø sleeve. Contrary to this, drawing C-615 calls for a 12" ø sleeve for 2Z-15 and a 16" sleeve for 2Z-18. Q number is 1.109. Hold for Engineering Disposition. 2 Hold Tags Applied, on item.

17. Reported By: C. Roberts Date: 10-7-77

18. Validated By: W. Barclay Date: 10-10-77

21. Routing: ☒ TO FIELD ENGINEERING ☐ TO OTHERS (SPECIFY)

22. ☐ Field Engineering Disposition ☒ FIELD ENGINEERING RECOMMENDED DISPOSITION TO PROJECT ENGINEERING

DISPOSITION REQUIRED BY 10-20-77

Recommend re-routing the pipe to these penetrations and using as is.

Accept 10/18/77

for C. Seeger 10/18/77

23. Project Engineering Disposition

24. Disposition Concurrence

REWORK	REJECT	REPAIR	USE AS IS

PROJECT FIELD ENGINEER ___ DATE ___

PROJECT ENGINEER ___ DATE ___

PROJECT CONSTR QC ENGINEER ___ DATE ___

AUTHORIZED INSPECTOR ___ DATE ___

25. Disposition Results

26. QC Acceptance

QC ENGINEER ___ DATE ___

AUTHORIZED INSPECTOR ___ DATE ___

On what basis did project engineering accept the material placed without moisture data

Ref to SEE - 22600 2257

This was maybe a continuation of Settlement Study

Consumers Power Company

NONCONFORMANCE REPORT

PROJECTS, ENGINEERING AND CONSTR
QUALITY ASSURANCE DEPARTMENT

PROJ NAME:	NC PART NO:	NC PART NAME:	NCR SER NO: Q 1-4-8-045
Midland 1 & 2	NA	NA	DATE OF NCR ORIG: 5-22-78
SERIAL NO:	ORG COMMITTING NC:	AREA/LOC OF NC:	DATE OF NCR REV: Closed 7-26-78
NA	Bechtel QC U.S. Testing	Plant Area Fill	FILE NO: 16.3.6

"AS IS" NONCONFORMING CONDITION VERSUS "AS REQUIRED" CONDITION WITH REFERENCES:

Section 13.0 of specification 7220-C-210, Rev. 5 provides the requirements for Q-listed backfill in the plant area. Section 13.6 states that the moisture control in this area shall be in accordance with Section 12.6 of the same specification. Section 12.6 states in part: "The water content during compaction shall not be more than 2 percentage points below optimum moisture content and shall not be more than 2 percentage points above optimum moisture content..."

"Tests done in accordance with Paragraph 12.4.2 will indicate the degree of moistening or aerating necessary to comply with Paragraph 12.6.1. After placement of loose material on the embankment fill, the moisture content shall be further adjusted as necessary to bring such material within the moisture content limits required for compaction..."

(Contd on Page 2)

DISTRIBUTION: This NCR is issued to:
GLRichardson

COPIES:
WLBarclay
WRBird
TCCooke
JLCorley
SHHowell
DRJohnson
GSKeeley
JMKlacking
BWMarguglio
PAMartinez
JMilandin
DBMiller
JFNewgen
DATaggart

RECOMMENDED CORRECTIVE ACTION, DATE & JUSTIFICATION: Recommended Part Corrective Action:

(A) Letter BCBE-1802 was written to cover this nonconformance.

(B) Receive a disposition from Project Engineering on this nonconformance by June 19, 1978.

Part Corrective Action Taken:

(A) Letter BEBC-2287 dated June 1, 1978 from Project Engineering accepted the material placed on the dates referenced in this NCR.

(B) Letter BEBC-2286 dated June 1, 1978 from Project Engineering accepted the material placed on the dates referenced in this NCR.

RESP FOR PART C/A:	DESIGN AUTH SIG: See letter BEBC-2286, BEBC-2287 & GLR-362.	PROC AUTH SIG:	FAB/CONST AUTH SIG:
NA		NA	NA
QA AUTH SIG:	PRO AUTH SIG:	CPS AUTH SIG:	QA AUTH SIG:
NA	NA	NA	Donald E. Horn

DOES NC AFFECT Q-LISTED ITEM:	YES [X] NO [ ]	IS NC REPORTABLE PER 50.55(e):	YES [ ] NO [X]
NC REPORTABLE PER 21:	YES [ ] NO [X]	IF "YES", DATE OF REPORT TO NRC: NA	
IF "YES", TIME OF REPORT TO NRC: NA		IF "YES", NAME OF NRC OFFICIAL TO WHOM REPORTED: NA	
IF "YES", WHO MADE REPORT: NA			
SPECIAL C/A REQUIRED:	YES [X] NO [ ]	IF "YES", SEE PAGE 3	

IF "NO", WHAT IS JUSTIFICATION:

NA

INSPECTION PROCESS C/A REQUIRED:	YES [X] NO [ ]	IF "YES", SEE PAGE 3	
INITIATOR'S SIGNATURE: Donald E. Horn		SUPERVISOR'S SIGNATURE: NA	
QA/C VERIFICATION SIGNATURE: Donald E. Horn		VERIFICATION DATE: July 26, 1978	

CONSTRUCTION

Consumers Power Company

NONCONFORMANCE REPORT

SUPPLEMENTAL SHEET

PROJECTS, ENGINEERING AND CONSTRUCTION - QUALITY ASSURANCE DEPARTMENT

ROOT CAUSE OF NC:

(A) Moisture Content Tests were either not obtained from the borrow areas or the documentation was misplaced.

(B) The soil classification and subsequent optimum moisture content determination was not requested by Quality Control to be performed by U. S. Testing.

NCR SER NO: 01-4-8-045

DATE OF NCR ORIG: 5-22-78

DATE OF NCR REV: Closed 7-26-78

FILE NO: 16.3.6

FINALIZE CORRECTIVE ACTION

DATE BY WHICH C/A COMMITMENT WILL BE MADE: NA

NATURE OF C/A: (A) and (B)

1. Moisture Content Test results now taken from the borrow areas are immediately reported to the Field Quality Control Engineer and entered into the Moisture Control Log. The Moisture Control Log is now submitted for filing in the Quality Control Vault along with soil density tests weekly summaries.
2. U. S. Testing held a training session on June 1, 1978, re-emphasizing the importance of the Moisture Content Control Log.
3. Bechtel Quality Control held a training session on July 24, 1978 as documented in QCFM-5023.

DATE OF C/A COMPLETION: July 24, 1978

DATE OF C/A EFFECTIVENESS: July 24, 1978

ORG RESP FOR C/A:
(A) U. S. Testing
(B) Quality Control

SIG OF PERSON MAKING C/A COMMITMENT:
See Letter GLR-362 & QCFM-5023.

INITIATION PROCESS CORRECTIVE ACTION

ROOT CAUSE OF INITIATION NC:

(A) Lack of attention to detail

(B) The soil classification and subsequent optimum moisture content determination was not requested by Quality Control to be performed by U. S. Testing.

DATE BY WHICH C/A COMMITMENT WILL BE MADE: NA

NATURE OF C/A: (A) and (B)

1. U. S. Testing will be notified by the Field Quality Control Engineer at the beginning of each shift as to the location of borrow areas and also notified when any change in the location of the borrow areas takes place.
2. Moisture Content Tests will be taken at the beginning of each shift and optimum moisture contents determined at this time. Upon completion of testing, the results will be reported to the Field Quality Control Engineer.
3. Soils in the borrow areas which have moistures outside the specified tolerance will be brought within tolerance prior to compaction.
4. Bechtel Quality Control held a training session on July 24, 1978 as documented in QCFM-5023.

DATE OF C/A COMPLETION: July 24, 1978

DATE OF C/A EFFECTIVENESS: July 24, 1978

ORG RESP FOR C/A:
(A) and (B)
Bechtel QC

SIG OF PERSON MAKING C/A COMMITMENT:
See letter GLR-362 and QCFM-5023

NCR ORIGINATOR'S SIGNATURE: Donald E Ahern

SUPERVISOR'S SIGNATURE: NA

PROJECT C/A VERIFIER'S SIGNATURE:

VERIFICATION DATE: 7-26-1978

RJC B
(1145C)

Bechtel insisting to maintain control of QC
i.e. Monsen & Jones to evaluate
pure fine -- ala

Bechtel hiring of people not completely
up to the level of excellence of Co.

Documents being reviewed by QA which
are not squeaky clean - ala FCR/FCN
being used for cover of NCR.

NCR conditions trying to be covered by
work authorization.

FCR/FCN fiasco: Bechtel didn't want to
report.; Bechtel review not adequate
before a re-review is necessary
attitude of really not all that bad.

Attitude of "not all that bad" pertaining
to violations of Board Order.

The continual discussions about Hold
Points on CCP - delaying approval.

3A

To RAWells

FROM DDCochran

DATE January 26, 1984

SUBJECT MIDLAND ENERGY CENTER PROJECT - EVALUATION OF FINAL REPORT FOR CABLE REINSPECTION
FILE 23.0 SERIAL 2?566

Consumers Power Company

INTERNAL CORRESPONDENCE

CC HPLeonard
BMPalmer
DATaggart

Attached is MPQAD - Plant Assurance Division's Evaluation of Final Report for Cable Reinspection.

EVALUATION OF FINAL REPORT FOR CABLE REINSPECTION

PERFORMED BY MPQAD-PLANT ASSURANCE DIVISION

BACKGROUND & INTRODUCTION

NRC inspection report 81-12 dated July 10, 1981 observed that MPQAD while performing overinspections was identifying numerous nonconformances in electrical cables that had been previously inspected and accepted by Bechtel Quality Control. These nonconformances generally dealt with attributes of cable routing and airlining. Shortly thereafter, NRC Inspection & Enforcement Region III asked the Company to identify and provide records of the QC inspectors involved in accepting the nonconforming components and to repeat inspections performed by those individuals. In the resulting overinspection involving 1534 cables (conducted between February and August, 1982) the Company found generic problems with cable routing.

As a result, in October, 1982 the Company formulated plans to reinspect all cables for routing and other accessible attributes. The plans also took into account an anonymous allegation made on television concerning improper cable substitutions. The final inspection plans included verification of routing, electrical circuit schedule cable size, cable type, and manufacturer's cable jacket information. The 1534 cables previously reinspected were reinspected again as necessary to include those added attributes.

This report contains an evaluation and analysis of the results of the Cable Reinspection Program described above (Attachment 1). It also includes a review of corrective action and a determination of overall project impact. Actions taken to prevent recurrence of problems identified in the above reinspections cover all areas of the project involved in quality activities including Inspector

training, Craft training, Field Engineer training, clarification of technical requirements, Project Quality Control Instruction revisions, and an Inspection Evaluation Program. (It should be noted that the NCRs evaluated in this report do not generally address all of these corrective actions. Some of these actions are being taken as part of the Construction Completion Plan and on going project initiatives.)

The following evaluation is presented in four parts. Part I describes conditions found related to the physical installation of the cables. Part II describes conditions found related to the proper identification of the installed cables. Part III describes the extra actions taken by MPQAD to ensure all nonconformances found during the reinspection were properly documented. Part IV is an attachment to this report with an explanation of the inspection process and a summary of the Nonconformance Reports (NCRs).

Part I. CABLE INSTALLATION REINSPECTION

(1) Period: 10/20/82 - 5/19/83

(2) Cables inspected: 7,558

(3) Attributes inspected - cable protection, bend radius, vias, tie downs and airlining.

(4) NCRs issued: 21 covering 921 items

A. Cable Routing

1. The bulk of the problems identified during this Reinspection were related to cable routing (575 items). Cables were not routed in accordance with the Electrical Circuit Schedule (E-37). Of the 575 items, 200 were dispositioned as "rework,

as-built unacceptable." The remaining 375 are "use-as-is." The specific problem areas have been analyzed by Project Engineering and are itemized in Enclosure 3 of Attachment 1. The above items were determined at the time of NCR issue not to be reportable under 10CFR50.55(e); however, a SCRE (98) has been written for PE to perform further evaluation. The overall project is affected due to the 200 items requiring rework either by Construction Work Package (CWP) or, if turned over, by Contractor Work Request (CWR). 364 of the above items were determined to be construction and inspection errors which resulted from Construction not following the Electrical Circuit Schedule (E-37) or failing to properly document authorized deviations to E-37, and Quality control not detecting and documenting nonconformances.

2. Corrective action to prevent recurrence of the cable routing problems has been completed. Classroom training and recertification of inspectors is complete. In addition the Inspection Evaluation program being implemented will provide a proactive control ensuring the adequacy of the inspection process in the future to detect problems as they occur. The PQCI for cable installation has been revised to clarify requirements including cable installation requirements especially relating to split tray and via changes. Construction personnel, craft and field engineering have received training in cable routing attributes. The above actions should insure a controlled cable installation.

B. Airlined Cables

1. During this reinspection 128 cables were identified as exceeding the maximum airlined distance. The basic requirement for airlining at the time of reinspection was "for cables that exceed three feet airline distance specific approval from Project Engineering must be obtained via FCN/FCR." Later the requirement changed to four feet for some areas and three feet for the remainder. The disposition of the 128 cables was as follows: 37 are to be reworked via CWP/CWR: 44 are "accept as is" per PE approval and 47 are acceptable based upon an Engineering change from the original requirement of three feet to four feet. The above items were determined by MPQAD not to be reportable under 10CFR50.55(e) due to airlining not affecting the safety function of the cables. The overall project is affected by the thirty-seven cables that have to be reworked.
2. The major cause of airling problems was lack of clarity in how to measure actual airline distance. To correct the problem, the airline requirements in E-42(Q) have been clarified to provide only one acceptable method for measuring airling. In addition, PQCI E-4.0 has been revised to give special attention to situations where airlining could occur during cable installation.

C. Raceway Stenciling

1. During this period 131 items were identified as nonconforming since specific raceways could not be positively identified.

39 of the raceways were eventually identifiable after further research and evaluation (finding alternate stencil locations, obtaining appropriate access to all surface areas of equipment, etc.) 89 of the items are to be restenciled. 3 items are "accept-as-is" since drawings have been changed to accept the found condition.

Project impact is limited since corrective action merely requires stenciling for the original time. Items of stenciling rework are due to other work activities, such as paint removal and repainting of walls which removed or covered the stenciling. The above items were determined by MPQAD not to be reportable under 10CFR50.55(e) as stenciling does not affect safety of the plant. When items are not stenciled their identification can still be determined from engineering drawings therefore information is not irretrievable.

2. The causes of this nonconformance are the following:

   (a) For reinspection purposes, some stenciling was inaccessible or covered by construction material. (Many equipment slots were stenciled but were not readable from the normal avenue of approach to the equipment.)

   (b) Some items were not being stenciled or identified as they were being installed.

   (c) Stenciling was removed by other construction activities (painting and removal of paint).

   Actions taken to prevent recurrence of this item include Craft training and inspector training.

D. Potential Damage to Cables

1. During this period 60 cables were identified as having incurred potential damage.

   (a) 26 cables were identified as being in conduit without proper protection by plastic bushings. 19 of these items are to be reworked. 7 of the items were initially dispositioned as not being nonconforming; however, this disposition was rejected by MPQAD and a Request for Further Response (RFFR) was issued. The response to the RFFR states that bushings are not required at the end of the conduit when flexible conduit is to be connected; however, the cables are to be appropriately protected until installation of the flexible conduit is complete. This is acceptable to MPQAD.

   (b) 11 of the 60 cables are under water. These 11 cables will be examined for damage and a megger test performed by Field Engineering with verification by MPQAD. Pending the results of this test the cables will be evaluated for acceptability.

   (c) 8 of the 60 cables are in flexible conduit without proper protection to prevent cable damage. These will be reworked.

   (d) 12 of the 60 cables are not properly supported by Kellum grips as required by Drawing E-42(Q). These cables are to be examined for damage by Field Engineering and MPQAD. Rework will be performed as necessary pending the results of the examination.

   (e) 1 of the 60 cables is in contact with raceway grounding hardware. This cable has been protected and will be

megger tested and replaced if necessary.

(f) 2 of the 60 cables were identified as violating the minimum bend radius requirements. 1 of these cables has been dispositioned as "scrap"/repull new cable. The other one was measured again and found to actually be within acceptable limits.

The above items were determined by MPQAD not to be reportable under 10CFR50.55(e) as the cables are designed for harsh environment service and the above conditions will not affect safe shutdown of the plant. The overall project is affected due to items above requiring testing and rework in some cases.

2. The above conditions were caused because construction did not follow approved drawings and procedures. To prevent recurrence, Craft and Field Engineering training programs have been developed. Also, PQCIs have been revised to cause QC inspectors to give closer attention to conditions that could cause cable damage.

E. Separation Criteria Violations

1. During this period 27 items were identified as not meeting the minimum separation criteria limits of Drawing E-47.

(a) 1 of the 27 items will be reworked to conform to the requirements of E-47.

(b) 26 of the 27 items were dispositioned in a generic response form Field Engineering which states, in part,

"DCN #163 to E-42(Q) was issued on 11/24/82 and has since been incorporated. This information provided the design of separation barriers which will be utilized to resolve separation problems when E-47(Q) requirements cannot be met during construction. Field Instruction FIE-4,200 provides the installation instructions for separation barriers. This installation will also be addressed in the Space Control Procedure FPG-4.100 in which all field routed conduit will be sketched out by Field Engineering. The sketches will include new barrier requirements. As for past work where locations have not been addressed the Construction Completion Program - Area Verification Phase will pick up existing locations. Also, prior to area turnover, the Area Teams will walk-down the areas for any barriers which might have been omitted."

The above items were determined at the time of NCR issue not to be reportable under 10CFR50.55(e). However, a SCRE (98) has been written for PE to perform further evaluation. The overall project will be impacted due to the amount of work to determine the location of barriers and then installing the barriers, as many locations will be difficult to access. All rework will be inspected by MPQAD.

2. The major cause of the actual problems of separation was the use of interim tie down measures, with final tie down to come later. This caused slackness in the cables, allowing them to move too close to other cables of different channels. The use of final tie downs is now being required by Construction. PQCI E-4.0 Installation of Electrical Cables has been revised to incorporate the final tie down requirements. With the completion of final tie down and

installation of designed barriers, the problems should be eliminated.

F. Miscellaneous Isolated Case Nonconformances

1. The following 3 itmes are considered isolated cases. They present no safety concern for plant operation. They were determined not to be reportable under 10CFR50.55(e).

   (a) 1 cable had 2 colors of paint on the outer jacket. The cable was properly identified on each end and was properly separated from other safety channel cable. The cable is to be reworked by Construction.

   (b) 1 item involed 2 cables with the same scheme numbers, both of which are terminted on the same points. The cause of the duplication was the failure of Field Engineering to issue a determination card for the rework of one of the cables. Construction did not have a determination card and could not determine the cable, therefore they cut it at the top of the cabinet. The cutoff cable has been identified and is to be removed.

   (c) 1 item also involves 2 cables with the same scheme number. The original cable is deleted-but-installed. The duplicate cable is not actually installed in any vias, however, it is coiled and located in the Lower Cable Spreader Room and was ready for installation. A Hold Tag has been applied to the duplicate cable. The duplicate cable is also the wrong size cable which is addressed in another section

of this report. The duplicate cable could not have been terminated properly due to it having too few conductors (required 5 conductor/14AWG - duplicate is 2 conductor/14AWG). The duplicate cable has been dispositioned as "scrap" and will be removed from the plant as soon as Q work resumes.

PART II. REINSPECTION FOR CABLE IDENTIFICATION

(1) Period: 10/20/82 -5/19/83

(2) Cables Inspected: 9,092

(3) Attributes Inspected: Temporary/Permanent Tag (Mylar) Cable Code

(4) NCRs issued: 9 covering 166 items

A. Cable Tag Information

1. During this period 157 cables were identified as having incorrect information on the field applied cable tag (Mylar). Of the 157 cables, 3 have been dispositioned as "accept-as-is". The remaining 154 items are to be reworked. The above items were determined by MPQAD not to be reportable under 10CFR50.55(e) as the Mylar information is for the purpose of cable identification and does not interfere with the cables' safety function. The cables themselves were in accordance with requirements. The overall project will be affected due to the amount of rework required to correct the information on the tags.
2. The major cause of the nonconformance was typographical errors on the installed tags. Some nonconformances are the result

of drawing changes which have not yet been worked. PQCI E-4.0 and E-5.0 as revised contain attributes which specifically address cable tag information verification (Temporary and Permanent). This should avoid inspection problems in the future.

B. Cable Code Verification

1. During this period 9 cables were found to be in noncompliance when cable jacket information was checked against Drawing E-37 and E-38. (E-37 gives cable code required, ie: B01; E-38 gives specific information as to what is required of a B01 cable code, ie: 14AWG/3 conductor.)

   (a) 3 of the 9 were found to have too few conductors.

   1 of the 3 was not actually installed, but coiled in the Lower Cable Spreader Room awaiting installation. It was also a redundant cable. The original cable was installed properly and was the correct size. The scheme had been deleted from plant design and the duplicate cable would not have been installed at all. If it had, it could not have been terminated properly and would not have passed any functional test. It could not have passed the test because it was required to be a 5 conductor and all 5 conductors had uses. The duplicate cable only had 2 conductors. Since the original cable scheme has been deleted from plant design, both cables have been dispositioned as "scrap". The above item was determined

by MPQAD not to be reportable under 10CFR50.55(e) as the cable had no safety function. Project impact will be minimal due to the short time required to remove a cable and no replacement cable is required.

The remaining 2 cables were dispositioned "accept-as-is". The design requirements in E-37 have extra conductors listed as "SPARES", therefore, the cables do provide enough conductors to adequately perform their design functions. The above items were determined not to be reportable under 10CFR50.55(e) as the cables can perform their intended safety function. The cause of the substitutions above is that Construction did not obtain and install the proper cable or obtain Project Engineering approval for substitution and Quality Control did not detect the nonconforming condition. Specific revisions to PQCI E-4.0 have been made to prevent this from happening in the future. Construction personnel have been trained in the importance of this attribute.

(b) 6 of the 9 cables were determined to be of smaller wire size than required by design. The disposition for the 6 cables is to replace them with cables of the proper size. 4 were replaced prior to the Balance of Plant (BOP) Q work halt in December, 1982. The other 2 are scheduled for replacement when BOP Q-work is restarted.

Conditions regarding these 6 cables were determined TO BE reportable under 10CFR50.55(e) (Report 82-11). SCRE #62 was issued 10/22/82 by MPQAD. The SCRE resulted in the items being determined to be reportable. This original SCRE only covered the first 4 of the 6 cables. The other 2 were reported as a supplement to the original 10CFR50.55(e) Report as they were found.

The above nonconformances resulted from the fact that Construction did not install the proper cables and Quality Control inspectors did not discover the condition.

2. The corrective action to prevent recurrence includes training of both craft and inspection personnel. Additionally specific revisions were made to the cable installation PQCI for clarity. The PQCI now specifically requires the inspector to check the cable jacket information against the criteria in E-37 and E-38. In addition, the Inspection Evaluation Program being implemented will provide a proactive control ensuring the adequacy of the inspection process to detect future problems should they occur.

PART III. REINSPECTION DOCUMENTATION REVIEW

(1) Period 5/20/83 - 10/24/83

(2) Documents Reviewed - 7.558

(3) NCRs issued - 22 covering 32 items

A. Documentation Review

1. After completion of the cable reinspection, a review was performed of the Inspection Reports prepared during the Reinspection Program implementation to ensure that all

installed cables had been inspected and that all documented nonconforming conditions had been reported on a Nonconformance Report.

During this review it was discovered that 32 nonconforming conditions as identified on the Inspection Reports had not been reported on a Nonconformance Report. The breakdown of the identified condition is as follows:

(a) 17 items concern routing - Part I.A. of this report contains necessary evaluations for routing problems.

(b) 5 items concern Mylar information - Part II.A. of this report contains necessary evaluations for Mylar problems.

(c) 6 items concern Airlining - Part I.B. of this report contains necessary evaluations for airlining problems.

(d) 3 items concern Raceway stenciling - Part I.C. of this report contains necessary evaluations for stenciling problems.

(e) 1 item concerns identification of a field installed vendor cable. The Mylar information is correct, however, there is no jacket information on the cable. The conductors cannot be measured due to the vendor installing plugs on each end of the cable. The number of conductors has been verified and is correct. The cable also has a vendor applied scheme number which is correct.

The above NCRs (22) are newly issued and have not been dis-

positioned. They relate, however, to process inadequacies associated with the reinspection and do not identify additional generic cable problems.

PART IV. ATTACHMENT

1. "Final Report of Cable Reinspection" - Ed Jones

SUMMARY

As a result of the Cable Reinspection Program, existing conditions have been verified and any deviations have been documented.

The inspections performed indicate that 6 out of 9,092 cables improperly substituted presented a safety concern[1]. Safety concerns revealed by the Cable Reinspections were limited to the 6 cases of undersized cables discussed in Section II.B.1(c).

The corrective actions taken include:

(a) Construction training (Craft and Field Engineering)

(b) QC Personnel training

(c) Project Quality Control Instruction revision

(d) Specification clarification

(e) Inspection Evaluation Program

The actions taken and the corrective actions to be implemented will adequately assure that cables installed to date will perform satisfactorily in service and that future installation will meet all applicable installation criteria.

FOOTNOTES:

1. Recently 8 cables were found to have repairs made by the vendor which are not qualified for use inside the containment. These cables are outside the scope of the Cable Reinspection Program and are under further evaluation by MPQAD. The problem has been reported under 50.55(e) requirements as a potential safety problem.

EVALUATION OF FINAL REPORT FOR
CABLE REINSPECTION
ATTACHMENT 1

TO: ROY WELLS

FROM: ED JONES

DATE: JUNE 22, 1983

RE: FINAL REPORT ON CABLE REINSPECTION

Distribution:

WRBird, P-14-418A
Bruce Burgess -USNRC
Ron Cook - USNRC
MLCurland - Midland
MADietrich - Bechtel-Midland
BTFoote - Bechtel-Midland
WJFriedrich - Midland
Ron Gardner - USNRC
RCHollar - Bechtel-AA
John Milandin - Midland
DBMiller - Midland
John Rutgers - Midland
DATaggart - Midland

FINAL REPORT ON CABLE REINSPECTION

As of October 1982, approximately 1534 Class IE electrical cables had been overinspected by MPQAD for all activities on PQCI/PIPRs except those requiring In-Process Inspection. In October 1982, the company decided to reinspect all remaining Class IE Cables for all inspection activities on PQCI/PIPRs except those that require In-Process Inspection. An anonymous allegation, as expressed in a TV interview viewed by MPQAD personnel, was also taken into account in the planned reinspection. Additional inspection criteria relating to cable coding were added. All personnel assigned to participate in the reinspection received documented training on the additional reinspection criteria relating to cable coding (Enclosure 1). Also, a special team reinspected the 1534 cables, previously overinspected, for cable coding problems. This reinspection and the reinspection of the balance of the cables on the coding question went beyond the scope of the allegation (Improper Substitution).

There are 9,092 Class IE cables installed including 405 cables that are deleted-but-installed. Of this total, 1,534 were overinspected prior to 10/20/82 and later reinspected for coding problems, 7,558 were fully reinspected after 10/20/82. Drawing E-37(Q) Revision 63 indicates there are 893 Class IE cables remaining to be installed.

This report will consist of three parts. Part I will address all cables inspected after 10/20/82 as a full scope reinspection and will contain all nonconforming conditions found, except those pertaining to cable code or deficiencies in the temporary or permanent installed tags. Part II will address only the cable code nonconformances and deficiencies found in all 9,092 Class IE cables installed. Part III contains Project Engineering's planned disposition of all nonconforming conditions concerned with cable routing and cable code deficiencies.

Part I

During the period 10/20/82 - 5/19/83, a team, under the direction of Danny Cochran, performed full scope reinspections of 7,558 Class IE cables that had not been overinspected prior to 10/20/82. This reinspection resulted in Nonconformance Reports summarized below (excluding cable code and permanent or temporary cable marker nonconformances reported under Part II):

NCR NUMBER	NO. OF CABLES	NONCONFORMING CONDITION
M01-9-2-162	19	Cables not routed in accordance with Design Drawing E-37(Q).
M01-9-2-193	479	Cables not routed in accordance with Design Drawing E-37(Q).
M01-9-2-147	12	Cables not routed in accordance with Design Drawing E-37(Q).
M01-9-2-148	3	Cables not routed in accordance with Design Drawing E-37(Q).
M01-9-2-153	26	Cables not routed in accordance with Design Drawing E-37(Q).
M01-9-2-170	36	Cables not routed in accordance with Design Drawing E-37(Q).
	5	Cables exceed maximum airlined distance allowed by Drawing E-42(Q).
M01-9-3-134	1	FCR E-3148 incorporated into Design Drawing E-37(Q) and shows 1 via numbered incorrectly.
M01-9-3-021	129	Raceway sections not identified and marked as required by Drawing E-42(Q).
M01-9-3-093	121	Cables exceed maximum airlined distance allowed by Drawing E-42(Q).
M01-9-3-107	26	Cables not protected by conduit bushings as required by Drawing E-42(Q).
M01-9-3-081	26	Cables do not meet separation requirements of Drawing E-47(Q).
M01-9-3-096	1	Cable does not meet separation requirements of Drawing E-47(Q).
M01-9-3-148	1	Cable identified with two Safety Channel Colors contrary to the requirements of FIE-3.500.
M01-9-3-120	8	Condition of flexible conduits does not meet the requirements of Drawing E-42(Q).
M01-9-3-109	11	Cables are not protected as required by FIE-4.100 and Drawing E-42(Q).
M01-9-3-142	1	Cable is not protected as required by Drawing E-42(Q).
M01-9-3-155	12	Cables are not supported properly by Kellems Grips as required by DrawingE-42(Q).

NCR NUMBER	NO. OF CABLES	NONCONFORMING CONDITION
M01-9-3-118	1	Cable violates minimum bend radius requirements of FPE-4.000.
M01-9-3-119	1	Cable violates minimum bend radius requirements of FPE-4.000.
M01-9-2-157	1	Cable violates requirements of Drawing E-28. There are two cables with the same scheme number.
M01-9-3-039	1	Cable violates requirements of Drawing E-28. There are two cables with the same scheme number.

PART II

During the period 10/20/82 - 5/19/83, all 9,092 Class IE cables, including 405 cables that are deleted-but-installed, were checked for correct cable code per Design Drawing E-37(Q). This inspection resulted in the Nonconformance Reports summarized below:

NCR NUMBER	NO. OF CABLES	NONCONFORMING CONDITION
M01-9-2-145	4	Cables installed are Code B01 (No. 14 AWG/3 Conductor). Drawing E-37(Q) requires Code B03 (No. 10AW/3 Conductor).
M01-9-3-039	1	Cable installed is Code B21 (No. 14 AWG/2 Conductor). Drawing E-37(Q) requires Code B24 (No. 14 AWG/5 Conductor).
M01-9-3-133	1	Cable installed is Code B25 (No. 14 AWG/7 Conductor). Drawing E-37(Q) requires Code B26 (No. 14 AWG/9 Conductor).
M01-9-2-184	1	Cable installed is Code B21 (No. 14 AWG/2 Conductor). Drawing E-37(Q) requires Code B31 (No. 10 AWG/2 Conductor).
M01-9-2-190	1	Cable installed is Code I07 (No. 16 w/Twst Shld Pr). Drawing E-37(Q) requires Code I01 (No. 14 w/Twst Shld Pr).
M01-9-3-149	1	Cable installed is Code B28/I04 (No. 14 AWG w/Shld/6 Conductor). Drawing E-37(Q) requires Code B25 (No. 14 AWG/7 Conductor).
M01-9-3-022	154	Installed cables are not permanently marked at each end with correct information required by Drawing E-47(Q).

NCR NUMBER	NO. OF CABLES	NONCONFORMING CONDITION
M01-9-2-156	1	Cable has a permanent color-coded cable marker with a green band on it. FPE-7.000 states that for this identified cable, the band should be req.
M01-9-2-159	2	Cables are installed properly, but the permanent cable markers were switched. This indicates wrong cable codes and termination violations.

PART III

Enclosure #2 addresses all NCRs generated that involve cable routing or cable code nonconforming conditions and indicates the expected disposition that will be provided in detail, with justification, for each NCR.

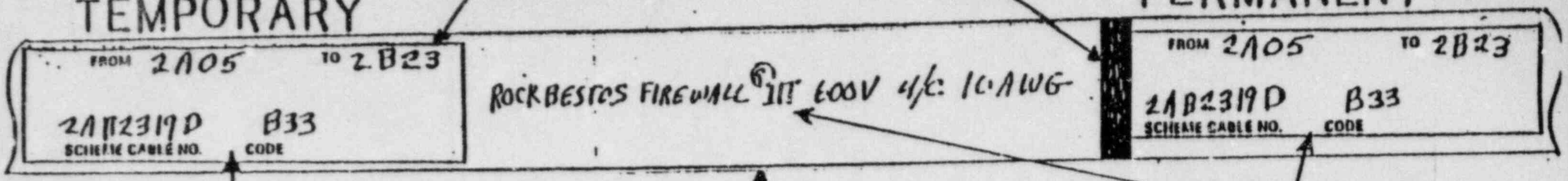
Enclosure #3 addresses all NCRs and provides information on how Project Engineering will justify each nonconforming condition.

Enclosure #4 addresses only those NCRs that are shown on Enclosure #3 as "Unique Case" with no potential generic concern.

ELJones
6/22/83

INSTALL PRIOR TO PULL
TEMPORARY

INSTALL AT TIME OF TERMINATION
PERMANENT



For all cable inspections and over-inspections accomplished prior to 10/20/82 the PQCI requirements were satisfied by checking the temporary tags installed prior to the cable pull for:

From and to locations
Cable Scheme Number
Cable Code

For all cable reinspections accomplished after 10/20/82 and with a special team checking cable code only for all cables overinspected prior to 10/20/82. The cable jacket information was compared to cable information in Drawing E-38, as well as the temporary tags installed, was used to determine:

From and to locations
Cable Scheme Number
Cable Code

CODE	CONT	C - CABLE DESCRIPTION
B33	1	600V CONTROL CABLE, 4/C #10AWG
B33	2	CAN BE USED IN CLASS 1E APPLICATIONS

EXTRACTED FROM DWG. E-38

Enclosure #1

NCR	REV.	RECIEVED	SEPARATION GROUP	VOLTAGE LEVEL SEGREGATION	CABLE SIZE	CONSTRUCTION ERROR	DCP		DRAWING ERROR	CONSTRUCTION ERROR	NCR ERROR NO NON-CONFOR EXISTS		MEMO TO ANN ARBOR	TOTAL
M01-9-2-193	11	6/16/83		90		56	28		61	241				479
M01-9-2-190	0	116/83			1									1
M01-9-2-181	0	1/6/83			1									1
M01-9-2-170	2	6/16/83		11		1			1	22				11
M01-9-2-162	1	6/16/83					1		3	15				19
M01-9-2-153	2	6/16/83				8			7	16				26
M01-9-2-148	0	11/18/82							2	1				3
M01-9-2-147	0	11/18/82		2					9	1				12
M01-9-2-145	0	11/18/82			4									4
M01-9-3-039	0				1									1
M01-9-3-149	0	5/11/83			1									1
M01-9-3-133	0	5/11/83			1									1
TOTALS				103	9	68	29		81	296				589

Enclosure #2

NCR	REV	COVERED ANALYSIS	WRAPPING CRITERIA	AIR LINES AT MCC'S	CONSTRUCTION INCOMPLETE	UNTOLD CASE	SEPARATION APPENDIX R	SEPARATION REG GUIDE	NO CONC TOTAL	DC WALK ABEA	THERMAL ANALY.	CABLE SIZE	CONCEPT TOTAL
M01-9-2-193	11	16	1	11	62	36			189	128	162		290
M01-9-2-190	0											1	1
M01-9-2-184	0											1	1
M01-9-2-170	2	7		4	6				17	11	13		24
M01-9-2-162	1	1	3	1		2			10		9		9
M01-9-2-153	2			16	8	2			26				
M01-9-2-118	0	1		1					2		1		1
M01-9-2-117	0					1			1	7	9		11
M01-9-2-115	0											1	1
M01-9-2-039	0											1	1
M01-9-3-119	0											1	1
M01-9-3-133	0											1	1
TOTAL		38	7	69	76	41			245	141	199	9	341

Enclosure #3

"UNIQUE CASE" ANALYSIS

NCR	REV.	DCP	DRAWING ERROR	NCR ERRO. NON-CONF.
M01-9-2-193	11		36	
M01-9-2-162	1		2	
M01-9-2-153	2		2	
M01-9-2-147	0		1	
TOTAL	—		41	

Enclosure #4

RJC

General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 788-0550

October 21, 1983

Mr E M Hughes
Bechtel Power Association
PO Box 1000
Ann Arbor, MI 48106

MIDLAND ENERGY CENTER PROJECT
SCRE 98: MISROUTED CLASS 1E CABLES
FILE: 15.1 SERIAL: 23818

Attached for your evaluation of safety significance is SCRE 98, which describes a condition of cables pulled through the wrong trays or conduit. A partial overinspection of cable installations identified a number of cables incorrectly routed. Bechtel performed an evaluation which concluded there was no adverse safety impact because of these misroutings. The results of this evaluation are contained in the "Report on Cable Installation, Midland Plant Units 1 and 2, June 4, 1982", which was an attachment to J W Cook letter to the NRC, dated June 11, 1982, Serial 17513. Subsequent overinspections of additional cable installations, revealed additional cable misroutings, some of which are identified on the NCR's attached to SCRE 98.

In a telephone conversation on October 14, 1983 between P W Jacobsen of Consumers Power Company and J G Kovach and P J Corcoran of Bechtel, it was determined that additional misrouted cables have been evaluated for impact on safety. The results of the evaluations are documented only on internal Bechtel memorandums, which are not identified on the applicable NCRs. Since there is no formal program requiring Bechtel Project Engineering review of the NCRs for safety concerns and it is not obvious from the NCR if those particular cable misroutings were evaluated, there exists a concern that some of the NCRs (hence cable misroutings) may not have been evaluated.

To resolve this issue, Bechtel is requested to provide a written report on the safety evaluation of the total population of misrouted cables. (Note: Attached NCRs are only samples and should not be construed as identifying the total population.) This written report should also contain the evaluation which was performed to verify conditions such as jet impingement, fire protection, flooding, HELBA and 2 over 1 are the same for the misrouted cables as for the original routing.

OCT 24 1983

OC1083-0006A-MP01

A final evaluation report should be received by MPQAD on or before November 18, 1983. If a final report is not completed by then, please provide the information requested in Appendix 1 to this letter.

W R Bird, Manager
Midland Project Quality Assurance

WRB/cd

CC: JWCook, P26-336B
JEBrunner, M-1079
DMBudzik, P24-517A
RJCook, NRC, Midland
GFEwert, Midland
MAFerens, P24-615
MADietrich, Bechtel
DJones, JSC-206
DLanham, Midland
BWMarguglio, JSC-220A
JAPucci, Midland
RAWells, Midland
JARutgers, Bechtel
RJErhardt, P14-113A

APPENDIX 1

Format for SCRE Evaluation Schedule

When formal submittal of the evaluation results is expected to take more than 30 days, the Organization Responsible for Further Evaluation shall submit the following information within 30 days.

1. Evaluation Objective

   A detailed discussion of how the evaluation will determine if the concern identified on the SCRE will affect plant safety. If the evaluation involves numerous activities, it should be separated into a number of smaller evaluations.

2. Detailed Schedule

   The evaluation(s) should then be broken into tasks.

   (A task is a single continuous activity performed within a discipline. For example, when an analysis is performed by a discipline, reviewed by another discipline and then revised as necessary by the originating discipline, is three tasks - (1) analysis, (2) review and (3) correction). For each task, identify the responsible discipline, duration of the task and scheduled completion date.

3. Schedule Update

   Every 30 days the schedule shall be reviewed, revised as necessary and submitted to Consumers Power Company. For those tasks which take greater than 30 days, the precent complete should be reviewed to make sure the task will be completed by the scheduled completion date. For those tasks which were not completed as scheduled, provide the reason for schedule slippage. If slippage was due to priority reasons, identify the higher priority items which took precedence.

AI#: S03089 Priority: 3 Trend: B-4 S/U: TMS00 Resp: BPT Disc: E

Consumers Power Company
QA69-1

SAFETY CONCERN AND REPORTABILITY EVALUATION

PROJECTS, ENGINEERING AND CONSTRUCTION - QUALITY ASSURANCE DEPARTMENT

4. HOW WAS CONCERN IDENTIFIED, WHEN, WHERE?

MPQAD has issued NCRs M01-9-2-193, M01-9-2-148, and M01-9-3-081 to document nonconformances involving routing and separation of Class 1E cables. (Attachments A, B and C)

Cable misrouting had been addressed prior to completion of the total cable routing reinspection program (See Reference below). The original conclusion was that the instances looked at did not represent significant safety concerns but that several conditions, had they occurred elsewhere, could have presented a safety problem but that additional

(CONTINUE ON NEXT PAGE)

TO MANAGER-MPQA

1. FROM: B L Harshe
ORGANIZATION: Proj Eng

SCRE NO: 98
FILE NO: 15.1
DATE RECEIVED: 9/9/83

2. IS CONCERN A PART 21? ☐ YES ☒ NO
WHEN?
BY WHOM?

3. IS NRC AWARE OF THIS? ☐ YES ☒ NO
WHEN?
BY WHOM?

5. BRIEF DESCRIPTION OF CONCERN - SYSTEM, COMPONENT, ACTIVITY, POSSIBLE SAFETY IMPACT - (ATTACH SUPPORTING DOCUMENTS).

Because of the deficiencies noted in the installation of Class 1E cables, separation requirements may not have been met and there is the possibility that the circuits identified may not perform their intended safety functions or adversely impact the safety function of other Class 1E cables.

The concern is to determine if any of the additional nonconformances identified during the reinspection effort do represent a significant safety concern. Engineering is to review the specific items and provide their written safety review.

(CONTINUE ON NEXT PAGE)

6. IMMEDIATE REPORTABILITY EVALUATION:
a. ☐ REPORTABLE - GO TO 13
b. ☐ POTENTIALLY REPORTABLE - GO TO 13
c. ☒ NOT REPORTABLE, FURTHER EVALUATION
d. ☐ NOT REPORTABLE

7. ORGANIZATION REPONSIBLE FOR FURTHER EVALUATION/Response Due Date:
Bechtel Proj. Eng. 11/11/83

8. FINAL REPORTABILITY EVALUATION (IF 6.c. CHECKED):
a. ☐ REPORTABLE b. ☐ NOT REPORTABLE

9. QA APPROVAL OF EVALUATION OF BLOCKS 1 TO 7: SIGNATURE, MANAGER, MPQAD: W Burd DATE: 10/19/83

10. JUSTIFICATION OF EVALUATION - (ATTACH SUPPORTING DOCUMENTS)

This concern is not immediately reportable because initial evaluation of a sample of similarly misrouted cables, as described in the Report of Cable Installation, Midland Plant, Units 1 and 2, June 4, 1982, did not identify specific or generic adverse impacts on safety.

Also, the NCR originators did not identify any specific cable misroutings as reportable.

10-13-83

(CONTINUE ON NEXT PAGE)

11. FINAL QA APPROVAL SIGNATURE, MANAGER, MPQAD DATE/TIME

12. NRC NOTIFICATION: HOW? DATE: TIME:
INDIVIDUAL NOTIFIED:
REFERENCE:

4. CONTINUED

controls would be put in place to prevent a safety problem from remaining in the plant. Subsequently, the decision was made to reinspect all cables.

(Reference: "Report on Cable Installation, Midland Plant Units 1 and 2, June 4, 1982" attached to CPCo Letter Serial 17513, dated June 11, 1982)

5. CONTINUED

10. CONTINUED

14. MINIMUM DISTRIBUTION:

VICE PRESIDENT - MIDLAND PROJECT (JWCook)
DIRECTOR - E&QA (BWMarguglio)
MIDLAND SITE MANAGER
MANAGER - SAFETY & LICENSING (DMBudzik)
GROUP SUPERVISOR - ADMINISTRATION (JAPucci)
EXECUTIVE MANAGER - MPQAD (RAWells)
NRC RESIDENT INSPECTOR (RJCook)
MIDLAND FILE NO. 15.1

15. ADDITIONAL DISTRIBUTION:

DJones
GFEwert
DLanham
JEBrunner
EMHughes
MAFerens

APPENDIX 1

Format for SCRE Evaluation Schedule

When formal submittal of the evaluation results is expected to take more than 30 days, the Organization Respousible for Further Evaluation shall submit the following information within 30 days.

1. Evaluation Objective

   A detailed discussion of how the evaluation will determine if the concern identified on the SCRE will affect plant safety. If the evaluation involves numerous activities, it should be separated into a number of smaller evaluations.

2. Detailed Schedule

   The evaluation(s) should then be broken into tasks.
   (A task is a single continuous activity performed within a discipline. For example, when an analysis is performed by a discipline, reviewed by another discipline and then revised as necessary by the originating discipline, is three tasks - (1) analysis, (2) review and (3) correction). For each task, identify the responsible discipline, duration of the task and scheduled completion date.

3. Schedule Update

   Every 30 days the schedule shall be reviewed, revised as necessary and submitted to Consumers Power Company. For those tasks which take greater than 30 days, the precent complete should be reviewed to make sure the task will be completed by the scheduled completion date. For those tasks which were not completed as scheduled, provide the reason for schedule slippage. If slippage was due to priority reasons, identify the higher priority items which took precedence.

DNC THIS NCR AFFECTS ACCEPTED SYSTEM

ATTACHMENT A

17

Consumers Power Company

QA 87-0

NONCONFORMANCE REPORT

PROJECTS, ENGINEERING AND CONSTRUCTION

PAGE 1 OF 2

1. NCR NUMBER:	2. START-UP SYSTEM:	3. PRIORITY CODE:	4. TREND CODE:	5. ACTION ITEM NO:
M01-9-2-148	2BGC, 2EAD - Cd 192	6	B-3	S-1773

6. PROJECT:	7. NONCONFORMING PART NO:	8. NONCONFORMING PART NAME:	9. DATE ISSUED:
MIDLAND PROJECT	2BA0610B, 0AB4524C 2AA0512C	Electrical Cables	11/1/82

10. NONCONFORMING PART SERIAL NUMBER:	11. RESPONSIBLE ORGANIZATION:	12. LOCATION IN PLANT:	13. DATE OF REVISION:
N/A	CPCo Tech Dept Bechtel Construction Bechtel Quality Control	Aux Bldg	~~N/A~~ 11/4/82

14. DISTRIBUTION:
ACTION: LEDavis REMcCue ESmith
INFO: WRBird DMiller JEBrunner JAMooney JWCook BHPeck MLCurland JARutgers DDCochran TKSubramanian MADietrich DATaggart RDJohnson RAWells MJuister JLWood GSKeeley ALAB-2 EWMarguglio MSchaeffer REMcCue MHanbury

15. FILE NUMBER: 16.0

16. REQUIREMENT:
Drawing E37, Electrical Circuit Schedule, Rev 58, contains routing requirements for Class 1E electrical cables.

17. NONCONFORMANCE: Contrary to the above, the following cables go through VIAs not in E37 and do not go through VIAs required by E37:

Scheme	VIA not in E37	VIA in E37
2AB0610B	2BJM02	----------
0AB4524C	2ASL364	2ASL361
0AB4524C	2ASL996	2ASL995
2AA0512C	--------	2AF109, 2AJ1161 2AE097, 2ASL927

	YES	NO
19. DISQUALIFYING DISPOSITION REQ?		X
20. Q-LIST EQUIP. INVOLVED?	X	
21. PROCESS CA REQ? (SEE BACK)		X
22. HOLD TAGS APPLIED?		X
24. REPORTABLE PER 50.55(e)?		X

18. RECOMMENDED PART CORRECTIVE ACTION:
1) Install cables in accordance with E37 (LEDavis).
2) Inspect installation of cables as required (ESmith).

23. LOCATION OF TAGS: N/A

25. REPORTED BY: N/A
26. REPORTED TO: N/A
27. DATE OF REPORT: N/A
28. TIME OF REPORT: N/A

29. NCR ORIGINATED BY: CC 11/4/82 DDCochran Danny Cochran
30. WRITTEN REPLY REQUIRED: 11/21/82
31. SUPERVISOR'S SIGNATURE/DATE: mjk 11/4/82 mjk mjk M.J. Schaeffer 11/1/82

32. PART CORRECTIVE ACTION PROPOSED:
See TRANSMITTAL 55815 Rec'd 7/18/83 8/19/83

33. QA CONCURRENCE-SIGNATURE/DATE: Danny Cochran

34. PART CORRECTIVE ACTION VERIFIED:
Reviewed TRANSMITTAL 55815

35. VERIFIED BY-SIGNATURE: Danny Cochran 8/9/83

36. HOLD TAGS REMOVED-SIGNATURE/DATE: N/A

37. NCR CLOSED BY - SIGNATURE/DATE: Danny Cochran 8/9/83

JOB 7220 MIDLAND PROJECT

BECHTEL POWER CORP.

TRANSMITTAL FORM

Nº 55815

PLEASE RECEIPT AND RETURN BLUE COPY IMMEDIATELY

DATE _____

*** ACTION**

ACTION FOR VENDORS	ACTION FOR OTHERS
1. ☐ APPROVED - MFG. MAY PROCEED	6. ☐ FOR APPROVAL
2. ☐ APPROVED SUBMIT FINAL DWG. MFG., MAY PROCEED	7. ☐ CONSTRUCTION
3. ☐ APPROVED EXCEPT AS NOTED. MAKE CHANGES AND SUBMIT FINAL DWG. MFG MAY PROCEED AS APPROVED	8. ☐ PRELIMINARY USE
4. ☐ NOT APPROVED. CORRECT AND RESUBMIT	9. ☐ REFERENCE
5. ☐ REVIEW NOT REQUIRED MFG. MAY PROCEED.	10. ☒ Complete Response

SUBJECT	CODE
☐ BECHTEL DRAWINGS	B
☐ VENDOR DRAWINGS	V
☐ MATERIAL REQUISITION	MR
☐ SPECIFICATIONS	S
☐ BID REQUEST	BR
☐ QUOTATIONS	Q
☐ PURCHASE ORDER	PO
☐ CONFERENCE NOTES	CN
☐ BID SUMMARY	BS
☐ SUBCONTRACTS	SC
☐ _____	X
☐ _____	Y

ATTENTION VENDORS: ALL FINAL DRAWINGS SUBMITTED TO BECHTEL MUST BE CERTIFIED TRANSPARENCIES.

QTY.	S. P. PREFIX / BECHTEL FOREIGN PR. NO. ☐ / BECHTEL DRAWING NO. ☐	REV. NO.	TITLE	VENDOR NO.	* ACTION	CODE
			FE AI J-206 QA AI S-1773 CPCO-NCR-M-01-9-2-148 rev. 1			

RECEIVED
JUL 8 1983
FIELD QUALITY ASSURANCE
MIDLAND, MICHIGAN

ORIGINAL
INFO
ROUTE
COPIES SENT AS ADDRESSED
DPC
M.L.C

COMMENTS: _____

CONSTRUCTION'S RESPONSE

TO	FROM
R. A. Wells - CPCo Midland cc: M. L. Curland	G. A. Hierzer - Midland Jobsite

☐ VENDOR PRINT
☐ OTHER

BY Geo A Hierzer

ORIGINAL

BBS FORM 16751

FE AI J-206

QA AI S-1773

CPCO-NCR-M-01-9-2-148 Rev. 1

Attached is Construction's complete response to the subject NCR

Cable 0AB4524C routing vias have been corrected on FCN E-9636 approved on 7-1-83.

Cable 2AB0610B routing vias have been corrected on FCN E-8962 approved on 7-1-83.

Cable 2AA0512C routing vias have been corrected on FCN E-6267 approved on 2-17-82.

T/N 55815

0510 (11-74)

BECHTEL

CALCULATION SHEET

DATE

DESIGN BY DATE CHECKED BY SHEET NO.

PROJECT JOB NO.

SUBJECT CALCULATION NO. FILE NO.

FE-AI-J-216

QA, AI-5-1773

CPCO NCR M01-9-2-148 Rev. 1

Attached is constructions Complete response to Subject NCR Rev. 1

Cable 0AB4524C routing Vias have been corrected on FCN E-9636 approved on 7-1-83

Cable 2~~A~~AB0610 B routing Vias have been corrected on FCN E-8962 approved on 7-1-83

Cable 2AA0512C routing Vias have been corrected on FCN E-6267 approved on 2-17-82

6/30

6/29/83

THIS NC [redacted] RETURNED OVER SYSTEMS [redacted] Page 1 of [redacted]

ATTACHMENT B

NONCONFORMANCE REPORT

PROJECTS, ENGINEERING AND CONSTRUCTION

QA 87-0

1. PART OF ITEM: See page 3 Turned Over CA 2&3	2. PROJECT CODE: 3	3. ~~ORIG. CODE:~~ ~~(X478)~~ ~~(X519)~~ (X479) ~~(X512)~~ (X512)B-3 ~~(X390)~~ (X466)	4. ACTION ITEM TO: S-1929
5. PROJECT: MIDLAND PROJECT	6. NONCONFORMING PART ID: See page 3 ~~4~~	7. NONCONFORMING PART NAME: Electrical Cables	8. DATE ISSUED: ~~1/27/83~~ 3/14/83
9. NONCONFORMING PART SERIAL NUMBER: N/A	10. RESPONSIBLE ORGANIZATION: Bechtel Construction/ ~~Quality Control~~ BOP/QC	11. LOCATION IN PLANT: Units I and II	12. DATE OF REVISION: ~~Rev A, 2/11/83 Rev 4 1/13/83~~ ~~2/16/83~~ 2/16/83 N/A Rev 3, ~~1/20/83~~

ACTION: GAzia, WJFriedrich

~~BSmith~~	STPoole
~~LEDavis~~	DDCochran
~~BMScott~~	~~KJSchaeffer~~
INVOLVED:	
WBBird	DBMiller
WPBeaudoin	JAMooney
~~JEBrunner~~	EHPeck
JWCook	JARutgers
PCorcoran	GWarner
~~WCurland~~	TSubramanian
MADietrich	DATaggart
MWanbury	RAWells
~~TPanigot~~	
~~JSheeley~~	~~EWood~~
PWMarguglio/ ~~DEK~~	
~~WAS-Z~~ DJones	File: 16.0

16. DESCRIPTION:

Drawing E-37 Electrical Circuit Schedule, ~~Rev 62~~ EC 63 ~~62~~ ~~Rev 25~~, contains routing requirements for Class IE electrical cables.

17. NONCONFORMANCE:

~~See page 3~~ See Page ~~1 thru 9~~ ~~9 10-15~~ 4 through ~~15~~ 27-28-29 31

	YES	NO
19. DISPOSITION REQUIRED:	-X-	X
20. ~~QUALITY~~ DEVIATION:	X	
21. PROCESS QA REQ: (SEE BACK)		X
22. ~~SCAR~~ TAGS APPLIED:		X
23. REPORTABLE PER 50.55(e)?		X

18. RECOMMENDED PART CORRECTIVE ACTION:

1) Install cables in correct vias. (LEDavis)

2) Inspect cable installation. ~~(BSmith)~~ (WJFriedrich)

22. LOCATION OF TAGS: N/A

24. REPORTED BY: N/A

25. REPORTED TO: N/A

27. DATE OF REPORT: N/A

28. TIME OF REPORT: N/A

26. DISPOSITION BY: D D Cochran

30. WRITTEN REPLY REQUIRED: ~~01/28/83~~ 3/4/83 SEE PAGE 3

31. SUPERVISOR'S SIGNATURE/DATE: MLC 1/24/83 m.j.s 1/24/83 m.d 1/24/83 m.f Schaeffer 1/24/83

32. PART CORRECTIVE ACTION PROPOSED:

32A	32B
CPCo Tech (McCue)	PCo Const (Peck

33. QA VERIFICATION AND DATE:

34. PART CORRECTIVE ACTION VERIFIED:

JUN 16 1983

QUALITY ASSURANCE

35. TIME TAKEN TO CLOSE OUT NONCONFORMANCE:

37. DAYS ISSUE TO CLOSEOUT DATE:

BLOCK 13:

BLOCK 30 WRITTEN REPLY REQUIRED:

REV 5,	3/1/83		
REV 6	3/14/83		
REV 7	3/18/83		
Rev 8	4/6/83		
Rev 9	4/15/83		5/23/83
Rev 10	5/31/83		7/05/83
Rev 11	6/14/83		8/01/83

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # M01-9-2-193 L

Date Issued 1/3/82 Rev 1 1/11/83

Week Ending 12/31/83 Rev 2 1/13/83

Page 2-4 of 15-23 Rev 4 1-4-10-1

Page 4 of 25-26-27-28-29-31 2/15/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 are underlined	Action Responsibility	Date of Nonconformance
1.	2AB6301H	OGDL-	ASL975	ASL972, ASA024	LEDavis, ESmith	12/30/82
2.	0AV081D	OGLF-	AJV006	AJV04, ATH002		
3.	1AS168A	ORLN-	--	AGM09, AFR07, ASL154		
4.	1BB6805U	OEAA-	--	BJM01, BJM02, BKA03		
5.	2AG1101F	2PEA-	--	AKE02, ATA01, AJN01		
6.	0BV004M	OGLH-	BJH012	BJH01, BJH043		
7.	2AQ396D	2SAB-	ASL991	AGK04, ~~N6L480~~, ASL1000	Deleted	
8.	2AQ396P	0SOB-	ASL991	AFR04, ~~N6L480~~, ASL1000	Deleted	
9.	~~1AB5311H~~	~~1GMA~~	~~AJU01, AJW01~~	~~APH01, APP01, APP02, APB01, AJB01~~	~~Deleted~~ CLOSED	
10.	~~1AB5312H~~	~~1GMA~~	~~AJU01, AJW01~~	~~AFE01, AFF01, AFF02, AFB01, AJB01~~	~~Deleted~~ CLOSED	
11.	1AA0503T	OEAA	ASL136, AJB011	AJB011, AKD03, AKD04, AKD05, AKD06, AKD07		
	--	--	AFL004, ASL935	AFL02, AFL10, AJS07, AJS08, AFL004		
12.	1AS311B	1GSC-	AJD037, AFR07	AFA01, AFL01, AFR09, AGM07, ASL154		
13.	1AS311C	1GSC	AJD037, AFR07	AFA01, AFL01, AFR09, AGM07, ASL154		
14.	1AS311E	1GSC	AJD037, AFR07	AFA01, AFL01, AFR09, AGM07, ASL154		
15.	1AS311H	1GSC	--	AFA01, AFL01, AFR09, AGM07, ASL154		
16.	1AS311D	1GSC	--	AGM09, AFR07, ASL154		
17.	2AB6302M	OEAA	ASL973	~~ASB01~~, ASL967, ASB01	Deleted	
18.	2AB6305C	OPIP-	AKA07, AKA08	AKA049, AJF07, AJF08, AKA09, AKA08		
19.	2AB6305A	OPIP	ASA03, ASA02			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Tucker 1/3/83 Date

Project Evaluator

Mat M.J. Schaffer 1/3/83 Date

Supervisor

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

HCH # Rev 1; 1/11/83 Rev 2; 1/13/83 Rev 3; 1/20/83 Rev 4
Date Issued 1/11/83 Rev 5
Week Ending 1/7/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
20	1AS169A	ORLN	-	AGM09, AFR07, ASL154	LEDavis, ESmith	01-03-83
21	1AS170A	ORLN	-	AGM09, AFR07, ASL154		
22	1AS171A	ORLN	-	AGM09, AFR07, ASL154		
23	1AS172A	ORLN	-	AGM09, AFR07, ASL154		
24	1AS173A	ORLN	-	AGM09, AFR07, ASL154		
25	1AS174A	ORLN	-	AGM09, AFR07, ASL154		
26	1AS175A	ORLN	-	AGM09, AFR07, ASL154		
27	1AS176A	ORLN	-	AGM09, AFR07, ASL154		
28	1AS177A	ORLN	-	AGM09, AFR07, ASL154		
29	1AS178A	ORLN	-	AGM09, AFR07, ASL154		
30	1AS179A	ORLN	-	AGM09, AFR07, ASL154		
31	1AS180A	ORLN	-	AGM09, AFR07, ASL154		
32	1AS181A	ORLN	-	AGM09, AFR07, ASL154		
33	1AS167A	ORLN	ATC07	ATC006, AJG07, AZ002, AGM09, AFR07, ASL154		
34	~~1AS168A~~	~~ORLN~~	~~-~~	~~AGM09, AFR07, ASL154~~	~~Delete~~	~~1/11/83~~
35	1AW060D	1EGA	-	AFK08, ASL990		
36	1AD1115A	1PEA	AJB01	AJL01, AKD01, AKD02		
37	1AI083A	1DGE	ATE018, AJ1124	ATE06, ATE05, ATE04, AZ071, ATE03, ATE007		
38	1AI082A	1DGE	ATE018, AJ1124	ATE06, ATE05, ATE04, AZ071, ATE03, ATE007		
39	1AFW086E	1DMA	-	AWW035, AFE02, AFP02		
40	1AB6301R	OGDL	-	AJA01, AJL01, AJL002		
41	1BB6405E	OPHO	BSL972	BSL971		
42	1BB6404D	OEAB	BSL972	BSL971		
43	1BB5643A	1PHL	BSL972	BSL971		
44	2AB2334C	1EGA	AJH02	ASL393, AJA06, AJA05		
45	2AFW143B	2ALA	ASL991	ASL1000		
46	2AB2307C	2GLC	AJH02	-		
47	2AB2309B	2GJA	AJA04, AJA05	-		
48	2AB2302B	2GJA	AJH02	ASL393, AJA06, AJA05		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator — Date — Supervisor — Date

M.J. Schnapper 1/11/83

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

NCR # -Rev-1- 1/11/83
Rev 2- 1/13/83
Date Issued -1/11/83- 2/16/83 -Rev 4
Week Ending 1/7/83
Page -5- of -8 9- 10 15
Page 6 of 25 -23 49 -26 -27 28 29

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
49	2AG1101F	2PCA	-	AKE02, ATA01, AJR01 ----Delete	LEDavis, ESmith	01-03-83
50	2AHP0307A	1EA6	AW004ASL333,AJA02	ASL334		
51	2AHP0302F	2EAD	-	ASL923		
52	2AHP0303F	2EAD	AJQ05	ASL923, AFK09, AFU01, AFV07, AGC10		
53	2AI040D	2RLC	AJQ05	AFV07, AGC10, AFK15		
54	2AI040E	2RLC	AJQ05	AFV07, AGC10, AFK15		
55	0DD6602L	0EAA	DF016	DF007, DFD15 ---------- Delete 2/16/83		
56	0DV004T	OGLH	DFP03,DFP02,DFP01	DFP04, DFC03, DFC02, DFC01, DFJ08		
57	0AW031W	OEAA	ASA020, ASA00	ASA028, ASA09, ASA07, ASA06, ASA05, ASA04		
	-		ASA027, AJ1059	ASA03, ASA014, ASL967		
	-		AP045			
58	0AW031AB	OEAA	ASA027, AJ1059	ASA032, ASA08, ASA07, ASA06, ASA05, ASA04		
	-		AP045	ASA03, ASA014, ASL967		
59	0AW031J	OEAA	ASA027, AJ1059	ASA08, ASA07, ASA06, ASA05, ASA04, ASA03		
	-		AP045	ASA014, ASL967		
60	1AB6302J	OEAA	ASL975	ASL972-- Deleted		
61	1AB8905C	1A6A	-	ASL171		
62	2AB530E	2BKD	-	AJA003, AKF01, AJA02		
63	1AB8911C	1A0A	-	ASL172		
64	1AHP0301C	1SAE	-	AWW035, AFE02, AFP07		
65	1AHP0301E	1SAE	-	AWW035, AFE02, AFP02		
66	1AHP0302F	1EAD	-	AFM14, AFK03, AFD03		
67	1AHP0303F	1EAD	-	AFM14, AFK03, AFD03		
68	1BB5615C	1BCA	-	BLB009, BLB13, BLB12, BLB001		
69	2A1771A	OGLH	AE030, ATF001	ASL931, AH050, ATF004, ATF13		
70	2AQ110D	2HHA	-	ASL921, AFB09, AFD09		
71	2AQ170D	2SBA	-	ASL980, AGK01, AGK02		
72	2AQ170E	2SBA	-	ASL980, AGK01, AGK02		
73	2AQ170F	2SBA	-	ASL980, AGK01, AGK02		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Manager Concurrence — Date — M.A. Schwartz 1/14/83 — Date

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

NCR # Rev 1 - 1/11/83 Rev 1 - 1/20/83 Rev 1
Date Issued 1/11/83 1/19/83
Week Ending 1/7/83
Page 6 of 9 15
Page 7 of 25 29

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
74	2AQ174C	2SBA	-	ALA01, AVA01	LEDavis, ESmith	1/3/83
75	2AQ174G	2SBA	-	ASL980, AGK01, AGK02		
76	2AQ396F	2ABA	-	ASL1000, NSL480, ASL991		
7	2AQ396H	2ABA	-	ASL1000, NSL480, ASL991		
78	2AQ396L	2BBD	-	ASL1000, NSL480, ASL991		
79	2AQ396W	2BBD	-	ASL1000, NSL480, ASL991		
80	2AQ396Z	2ABA	-	ASL1000, NSL480, ASL991		
81	2BB1804H	2BKA	BKG01	BKE02, BKG02, BJP01, BJP02		
82	2BB2404G	2GLC	-	BFA01, BJG01, BJE01		
83	0AW031Q -	OEAA	AP045, AJ1059 ASA027, ASA08	ASL867, ASA014, ASA03 ASA04, ASA05, ASA06 ASA07		
84	0AI046A	OGLH	AGL03	ASF03, AGL04		
85	0BY3616A	2PHH	BSL953	BSL952		
86	1AB2324Y	2GSA	AKA059	AKA046, AKA20		
87	1AB5547U	1BBB	AFA03, AFA02	AFP03, AFN03, AFN02, AFK08		
88	1AB0910A	1EGA	- -	ASL171, AFG04, AJM11		
89	1AB0910B	1EGA	-	ASL171, AFG04, AJM11		
90	1AB0910C	1EGA	-	ASL171, AFG04, AJM11...AFC03, AFC04, AFK03		
91	1AS206E	ORLN	AJG012	AJG07, ATC006		
9	1AV099H	1GHA	AFE001	AFE006, AFP01		
9	1AV100H	1GHA	AFE001	AFE006, AFP01		
94	1AHP0302C	1EAD	-	ASL950, AFA11		
95	1AHP0300C	1EAD	AFA01	AFA11, AFN01, AFN02		
96	1AHP0303K	1EAD	-	AJS07, AJS08, ASL934		
97	2A1000C	2RLC	AH050	-		
98	2AQ111D	2BHA	-	AGL921, AFB09, AFD09		
99	2AQ121A	1DCA	AZ034	AJE02, AZ035, AJE03		
100	2AQ174E	2SBA	-	ASL980, AGK01, AGK02		
101	2AQ178S	2SBA	ASL991	AGK04, ASL1000, NSL480		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator Date — M.J. Schaeffer 1/11/83 Supervisor Date

NCR # Rev 2: 1/13/83

Date Issued 1/12/83 Rev 3

Week Ending 1/7/83

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CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
102	2AQ170Y	2SDA	-	AJG13, AFE01, AFU99	LEDavis, ESmith	1/3/83
103	2AQ194B	2BNA	-	ASL921, AFD09, AFD09		
104	2AQ194C	2BNA	-	ASL921, AFD09, AFD09	CLOSED Delete 1/4/83	
105	2AQ396AA	2ABA	-	AVA04, AVA011, AVA03		
106	2AQ412J	2BCA	-	AFA09, AFB09, AFD09		
107	2DA0607S	OEGA	BKG03, BJP01, BJH02	BJA03, BJA04, BJA05, BJP02		
	-		BJP03, BJP04, BJH05	-		
	-		BJP06, BJA06	-		
108	2DA0607Z	OEGA	BFB020, BJ128	BJ036, BJQ02, BJQ01, BFH02		
109	2DB1806J	2GJA	BFL05	BWW022, DGF02		
110	2DB1806M	2GJA	BFB011, BJ037	BFB02, BFB009, BJ034		
111	2DB1806T	2GJA	BFB011, BJ037	BFB02, BFB009, BJ034		
112	2DB2402D	2GJA	BJ037	BFB011, BJ036		
113	2DB2406C	2GLC	BFL03	BFJ25, BFL05		
114	2DB2407C	2GLC	BFL04	BFJ25, BFL05		
115	2AB5538C	2BKB	AJH08	AJA03, AJH09, AKA03		
116	1EB019C	1DCA	ED005	-	Delete 1/5/83	
117	1DY1401A	1SDA	-	DJ351, DJ350, DD007		
118	1DY1402A	1SAB	-	DJ351, DJ350, DD007		
119	1DY1403A	1BDC	DFA08			
120	0AW030W	0EAA	AP071	AP059, AS429, AP034, AS413, AJ441, AP042		
121	1AFW086F	1HMA	-	AWW035, AFE02, AFP02		
122	1AFW086H	1HMA	-	AWW035, AFE02, AFP02		
123	1AB5304A	1JEA	ASL944	ASL945		
124	2AB2325C	2NKA	-	AKA039, NZ147, NK258		
125	2AB2325E	2NKA	-	AKA039, NZ147, NK258		
126	2AB2325N	2NKA	-	AKA039, NZ147, NK258		
127	2AB2342C	2EAC	AJH09	ASL399, AJH07, AJA03		
128	2AB2319A	2GLC	AJD04	AZ103, ATD04, AJD005		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Tschen 1/4/83 — M.T. Schnaubelt 1/4/83

Report Originator Date — Supervisor Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # Rev 1, 1/11/83

Date Issued 1/10/83 Rev 1

Week Ending 1/7/83

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	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
129	2AB2330H	2RLP	AJH04	AJH05, AJA04, AJC01	LEDavis, ESmith	1/3/83
130	2AB1704H	2BKA	-	AJA003, AKF01, AJA02	↓	↓
131	2AB1706M	2GJA	-	AJA004, AKF02, AJA02		
	1AB2340K	1GLC	AJ014,AJ694 AFE002	ASL101, AJ224, AJ1015, AFE005, AFE01		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Locher — Report Originator — Date

M.J. Schoessow — Supervisor — 1/11/83 — Date

NCR # M01-9-2-193

Date Issued ~~1/13/83 Rev 2~~ ~~Rev. 1 1/20/83~~

Week Ending 1/14/83 ~~Rev 1~~

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CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
133	1AQ174F	1SDA		ASL912	AH063	AJ636	AH046	LEDavis, ESmith	1/13/83
134	2BFW128B	2EAD		BFM01	BFH01	BFB01			
~~13~~	~~2BQ192D~~	~~2DDB~~	~~DDB06~~	~~-----~~				~~Delete~~ AC 6/15/83	
~~13~~	~~2BQ493D~~	~~2DDB~~	~~DDB06~~	~~-----~~				~~Delete~~ AC 6/15/83	
~~137~~	~~2BD010C~~	~~2DCA~~	~~ED004~~	~~-----~~				~~Delete~~ AC 6/15/83	
~~138~~	~~2BD019C~~	~~2DCA~~	~~ED005~~	~~-----~~				~~Delete~~ AC 6/15/83	
139	1DQ101B	2SDA	-----	DTA01	1DC002	DTA003	DTA21		
140	2DQ106C	2SDA	-----	DH052	DH051	DH050			
141	2DQ109C	2SDA	-----	DH052	DH051	DH050			
142	2DQ192F	2SDA	-----	DH052	DH051	DH050			
143	2DA0012A	2PEB	-----	BFH01	BFA01	BJG01			
~~144~~	~~2AQ392D~~	~~2DGB~~	~~-----~~	~~APL05~~	~~APN01~~	~~APN02~~	AC 6/15/83		
~~145~~	~~2AW070B~~	~~2EGA~~	~~-----~~	~~AJR13~~	~~ATR12~~	~~AJP13~~		~~Delete~~ AC 6/15/83	
146	2AP?334A	2EGA	AJH02	ASL393	AJA06	AJA05			
147	2AA0500A	2ALA		AFS03	AGH02	AFP02			
148	2AY005D	2BCA	-----	ASL921	AFB09	AFD09			
149(a	2AMU085F	2BGA		AFH01	AFD01	AFD01			
149(b	2AMU085F	2BGA	AKF02	AJF02	AFK01	AJA02			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator — Date — Signature — Date

NCR # NO1-9-2-193

Date Issued ~~Rev 3, 1/20/83~~

Week Ending 1/21/83 ~~Rev 4 2/16/83~~

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 (Are Underlined)	Action Responsibility	Date of Nonconformance
50)	2BB2409B	2GJA	2BSL425,2BKF03	2BSL431 2BKF09	LE Davis/E Smith	1/19/83
51)	2AV023H	2GJA	2ASL395,2AJH03	2ASL398 2AJH07 2AJA03 2AJA04 2AJC01		
52)	2AV003A	2GJA	2AJH02	2ASL393 2AJA06 2AJA05		
53)	1BQ433A	1BBB	2BKD04	2BKC03 2BKD05 2BKE01		
54)	1BQ452C	1SDA	1BD047	2BD049 2BD048		
55)	1BQ452J	1SDA	1BD048	2BD049 2BD047		
56)	1CQ156B	1SAA	----------	1CG033 1CJ1000 1CG017 1CJ673		
57)	2AQ309A	2BHA	==========	2AJG13 2AJR12 2AJP13 2AJR13	Delete AC 6/1/83	
58)	~~2AQ510A~~	~~2BHA~~	~~----------~~	~~2AJG13 2AJR12 2AJP13 2AJR13~~	Delete AC 6/1/83	
59)	2BG1205B	2PEB	2BJH01,2BJA04	2BJB03 2BJB02 2BJB01 2BKG03 2BJA03		
60)	2CQ176A	1SBA	----------	2CG023 2CVA01		
61)	2CQ176B	1SBA	----------	2CG023 2CVA01		
62)	2CQ176C	1SBA	----------	2CG023 2CVA01		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 1/24/83 — Project Engineer — Date

M. J. Schaefer 1/24/83 — Concurrence — Date

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

NCR # NOT-9-2-1[illegible] Rev 4
Date Issued 2/18/83
Week Ending 2/18/83
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	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
163)	1AQ403F	1SAB	ASL935	AJS07	AJS08	ASL934		LEDavis/WFriedrich	2/14/83
164)	1AQ476B	1DDB	----------	ASL950	AFA11	AFN01			
165)	1BQ454A	1SAA	BFD09	------					
166)	2BA0607S	0EGA	BKG03; BJP01; BJP02, BJP03, BJP04, BJP05, BJP06, BJA06	BJA03; -Delete ---Delete ----Delete	BJA04	BJA05	BJE01	Delete	2/15/83
167)	2BI076A	2EGA	----------	BSL933	BTF20	BTF01			
168)	2BI076B	2EGA	----------	BSL933	BTF20	BTF01			
169)	2BQ179Y	2SBA	BFJ23	------					
170)	2BQ215A	2BBC	BFB010	BJ030	BFB008	BFB02			
171)	2BQ395D	2BGE	BFJ23	------					
172)	2BS511E	2SDB	BKA06	------					
173)	2DQ181S	2SBA	DGA01	DSL912	DFB01	DWW003			
174)	1AQ102N	1SBA	AGL02	------					
175)	1AQ102P	1SBA	AGL02	-------					
176)	1AQ102R	1SBA	AGL02	--------					
177)	1AQ102S	1SBA	AGL02	------					
178)	1BB5401K	0EAA	BSL936	BSL937	BDB01				
17	1BD2107A	0EAA	BFF06	BFF05	BFD16				
180)	1BFW140B	1ALA	-----	ASL927	BJS13	BJS12			
181)	1BFW141B	1BBB	-----	ASL927	BJS13	BJS12			
182)	1BQ433D	0GLC	-----	ASL929	BJS12	BJS11			
183)	2AB2321H	2GSC	AFE02	AFP03	AFE03	UNIT 2			
184)	2AQ435A	2GSC	-----	AFS05	AGL05	AFS06			
185)	2AQ435C	2GSC	-----	AFS05	AGL05	AFS06			
186)	2AQ437A	2GSC	-----	AFS05	AGL05	AFS06			
187)	2AQ437C	2GSC	-----	AFS05	AGL05	AFS06			
188)	2AQ438A	2SDA	-----	AFS05	AGL05	AFS06			
189)	2AQ438C	2SDA	-----	AFS05	AGL05	AFS06			
190)	2AS198A	0RLN	AGL02 AGL03	AGH98	AFS02	AFS03	AGL04		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Denny Eckman 2/18/83 M.G. Schaffer 2/11/83

CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

NCR # N01-9-2-193
Date Issued 2/18/83 Rev:
Week Ending 2/10/83
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	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
191)	2AS311B	2GSC	--------	AFS05	AGL05	AFS06	AFT05	(LEDavis/WFriedrich	2/14/83
				AFT06	ASL154				
19	2AS311C	2GSC	--------	AFS05	AGL05	AFS06	AFT05		
				AFT06	ASL154				
193)	2AS311E	2GSC	--------	AFT05	AFT06	ASL154			
194)	2AS311H	2GSC	--------	AFT05	AFT06	ASL154			
195)	2AY3109A	0RLN	AFR06	AFN01	AFL01	AFR09			
196)	2BB2420C	2GLC	BSL426, BKF05	BSL428	BKF07	BJB02	BJB03		
197)	2BB2421C	0GLC	BSL429, BKF07	BSL431	BKF09	BJB02			
198)	2BI050C	2RLC	BSL932	BSL933	BJQ20				
199)	2BI055A	2ALA	--------	BSL932	BTF01				
200)	2BI055B	2ALA	--------	BSL932	BTF01				
201)	2BI055C	2ALA	--------	BSL932	BTF01				
202)	2BI055D	2ALA	--------	BSL932	BTF01				
203)	2BI061B	0EAA	--------	BSL932	BTF01				
204)	2BQ159H	2SAA	BGF06	BFL09	BFB014				
205)	2BQ159J	2SAA	BGF06	BFL09	BGB014				
206)	2BQ159K	2SAA	BGF06	BFL09	BGB014				
207)	2BQ159L	2SAA	BGF06	BFL09	BGB014				
2	2BQ159M	2SAA	BGF06	BFL09	BGB014				
209)	2BQ159N	2SAA	BGF06	BFL09	BGB014				
210)	2BQ159P	2SAA	BGF06	BFL09	BGB014				
211)	2BQ159Q	2SAA	BGF06	BFL09	BGB014				
212)	2BQ159R	2SAA	BGF06	BFL09	BGB014				
213)	2BQ159S	2SAA	BGF06	BFL09	BGB014				
214)	2BQ159T	2SAA	BGF06	BFL09	BGB014				
215)	2BQ159U	2SAA	BGF06	BFL09	BGB014				
216)	2BQ159V	2SAA	BGF06	BFL09	BGB014				
217)	2BQ159W	2SAA	BGF06	BFL09	BGB014				
218)	2BQ159X	2SAA	BGF06	BFL09	BGB014				
219)	2BQ159Y	2SAA	BGF06	BFL09	BGB014				

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block #1), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 2/18/83 M.T. Schaeffer 2/10/83

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Rev 4

Date Issued 2/18/83 Rev 3

Week Ending 2/19/83

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	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
220)	2DQ159DF	2SAA	-----	DFK07	DFK08	BSL908		(LEDavis/WFriedrich	2/14/83
221)	2DQ159DG	2SAA	-----	DFK07	DFK08	BSL908			
222)	2DQ159DJ	2SAA	-----	DFK07	DFK08	BSL908			
22	2DQ192F	2SBA	-----	BH078	DH077	BH076			
224)	2DQ273A	2SBA	-----	BSL983	BFH03	BFH02	BFH04		
225)	2CQ172A	2SBA	-----	CA001	CG023	CVA01			
226)	2CQ172B	2SBA	-----	CA001	CG023	CVA01			
227)	2CQ172C	2SBA	-----	CA001	CG023	CVA01			
228)	2CQ189A	2SBA	-----	CH017	CH018	CH019	CH020		
229)	2CQ189C	2SBA	-----	CH020 CH016	CH019	CH018	CH017		
230)	2CQ192F	2SBA	-----	CH020 CH016	CH019	CH018	CH017		
231)	2DI069C	2BBD	DSL 934, DE018 DJ007, DE019, DTA017, DTA08 DTA07, DTA06, DTA05, DTA04, DTA03	ASL935	DE010	DTA001	DTA02		
2[illegible]	2DI069D	2BBD	DSL934, DE018 DJ007, DE019 DTA017, DTA08, DTA07, DTA06 DTA05, DTA04, DTA03	ASL935	DE010	DTA001[illegible]	DTA02		
233)	2DQ173A	2SBA	-----	DA001,	DG018	DVA02			
234)	2DQ173B	2SBA	-----	DA001	DG018	DVA02			
235)	2DQ173C	2SBA	-----	DA001	DG018	DVA02			
236)	2DQ177A	2SBA	-----	DA001	DG018	DVA02			
237)	2DQ177B	2SBA	-----	DA001	DG018	DVA02			
238)	2DQ177C	2SBA	-----	DA001	DG018	DVA02			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Eckhardt 2/18/83 M.J. Schuster 2/18/83

NCR # NOI-9-2-124

Date Issued 2/10/83 Rev-6

Week Ending 2/11/83

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CABLE ROUTING REINSPECTION PROGRAM
(VIA DISCREPANCIES)

	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
239)	0AY3311A	2PHA	ASL391	ASL392	AJH11			(LEDavis/WFriedrich	2/14/83
240)	0AY3313A	1PHG	ASL941	ASL942	AJN01				
24	0DD6602L	0EAA	-----	BFF05	BFD16	BFD15			
242)	01W030S	0EAA	BFL12	BGF06	BFF01				
243)	1AQ154J	1SAA	AFL04	-----					
244)	1AQ166A	1BTB	AJD063	AJD07	AJD06				
245)	1AQ166C	1BTB	AJD063	AJD07	AJD06				
246)	1AQ392D	1DGE	ASL979	AFL04	ASL978				
247)	1BQ393D	1DGE	ASL979	AFL04	ASL978				
248)	1AQ396F	1ADA	AGL02	-----					
249)	1AQ396H	1ADA	AGL02	-----					
250)	1AQ396L	1BBD	AGL02	-----					
251)	1AQ403D	1SAB	ASL933	AJS09	ASL934				
252)	1BST013C	1ADB	BFF06	BFF05	BFD16				
253)	1BST047A	1ADA	BJ128	BGB014	BJ136				
254)	1BV003A	1GJA	BFF10	BWW016	BGD05				
255)	1BW015C	0EAA	BSL971	BSL972	BP014				
256)	1BV201C	1GNC	BSL301	BFD10	BFB09	BFD08	BFD07	-Delete	2/15/83
			BFB-001	BFD06	Delete				
2.	2BW068A	2EGA	BFJ13	-----					
258)	2BW069A	2EGA	BFJ13	-----					
259)	2BW069C	2EGA	BFJ13	-----				--Delete	2/15/83
260)	2BW070B	2EGA	BFJ13	-----					
261)	2BY1211A	2SBB	-----	BJR01	BJB03	BJB02			
262)	2BY1213A	2SOA	BFA12	BFM13	BFM12	BFM11			
263)	2BY1215A	2RLR	-----	BJR01	BJB03	BJB02			
264)	2BY1217A	2RLO	BFL10	BGF07	BFG004				
265)	2BY1210A	2SAA	-----	BJR01	BJB03	BJB02			
266)	2BY3207A	2DJC	BSL169	BSL170	BJA015	BJA04			
			BJA014						

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Lacher 2/18/83 M.J. Schneider 2/15/83

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 2/18/83 Rev-4

Week Ending 2/19/83

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Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
2BY3200A	2DGC	BSL170 BJA015	BSL169 BJA014 BJA04	LEDavis/WFriedrich	2/14/83
2BY3225A	2DHA	BFM16	BFB16 BFB15 BFM17 BFM15 BJP09 BJA06 BKA05	↓	↓
2BY3227A	2PHR	BSL960	BSL961 BKC02		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator Date Supervisor Date

CABLE ROUTING REINSPECTION PROGRAM

NCR # M01-9-2-193
Date Issued 3/1/83
Week Ending 2/25/83

	Schema #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
270	OAW030Q	OEAA	AP072 AJ469 AP063 AJ429 AP048	ASL975 AP042 AJ441 AJ413	LEDavis/ WJFriedrich	3/1/83
271)	OAW030R	OEAA	AP063 AJ469 AP072	AJ429 AP023 AJ413 AJ441 AP015 ASL975		
272)	OAW030S	OEAA		AFC02 AJB01 AJB025 AA027 AMH006 AA063 AJ1059 ASA027 ASA08 ASA07 ASA06 ASA05 ASA04 ASA02 ASA03 ASA014 ASL968		
273	OAW030T	OEAA	AP063 AJ469 AP072	AJ429 AP023 AJ413 AJ441 AP015 ASL975 ASL969		
~~274)~~	~~OAY3313A~~	~~1PHC~~	~~ASL941~~	~~ASL942~~	Delete AC 9/15/83	
275)	1AA0509A	OEGA		AHA018 AJA20		
~~276)~~	~~1AA0510A~~	~~1EGA~~		~~AHA018 AHA20~~ DELETED		
277)	1AA0511A	1DGC		AHA018 AHA20		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator Date 3/1/83 — Supervisor Date 3/4/83

CABLE ROUTING REINSPECTION PROGRAM

NCR # M01-9-2-193

Date Issued 3/1/83

Week Ending 2/25/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED			Action Responsibility	Date of Nonconformance
278	1AA0511A	1DGC		AFK03	AFC04	AHB04	LEDavis/ WJFriedrich	3/1/83
279	1AA0512A	1DGC		AFK03	AFC04	AHB04		
28	1AB2305G	1GLC		AHA10	AHA09	AHA11		
281	1AB2306F	0GLC		AHA10	AHA09	AHA11		
282	1AB2307G	1GLC		AHA10	AHA09	AHA11		
283	1AB2313G	1GLC		AHA10	AHA09	AHA11		
284	1AB2319G	1GLC		AHA10	AHA09	AHA11		
285	1AB2320F	0GLC		AHA10	AHA09	AHA11		
286	1AB2321L	1GLC		AHA10	AHA09	AHA11		
287	1AB5506M	1DGE		AHA018	AJA20			
288	1AW014F	0EAA	AFK09					
28	1AW014K	0EAA	AFK09					
290	1AW014N	0EAA	AFK09					
2	1BI064G	1ALA		ASL926				
292	1BI065G	1ALA		ASL926				
293	1BI075D	1DBA		ASL929				
294	1BI080D	1DBA		ASL929				
295	1BI081D	1DBA		ASL929				
296	1BI089C	1SAE	BSL932	BSL933				

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Dennis Cochran 3/1/83 — Report Originator — Date

E. Friedrich 3/2/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

NCR # M01-9-2-193
Date Issued 3/1/83
Week Ending 2/25/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
297)	1BI089D	1SAE	BSL932	BSL933	LEDavis/WJFriedric	3/1/83
298)	1BQ175F	1SBA	BH107	BJ637 BH061 BTE01 BTE010		
29	1BY3219A	1SDA	BFD27	BFD29 BFD28 BFD25 BFD28 BFD29		
300)	1EB018C	1BCA	ED004		Delete OC 4/15/83	
301)	2BFW140A	2ALA		BJP08 BJP06 BJP07		
302)	2BFW141A	2ALA		BJP08 BJP06 BJP07		
303)	2BFW141G	2ALA	BGF05	BFL08 BGB004		
304)	2BQ492B	2BBB	BTB06	BTG01 BKR01 BTB06 BTB05		
305)	2BQ493B	2BBB	BTB06	BTG01 [illegible]1 BTB06 BTB05		
306)	2BV003A	2GJA	BSL423 BFL05	BSL422 BJF01.... BWW022 BFL04		
307)	2BV023E	2GJA	BSL364	BSL363 BFK14		
306	2BV023Q	2GJA	BSL364	BKF14 BSL363		
3C	2BV154A	0GLJ	BKDQ6 BKD04			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Lochua 3/01/83
Report Originator Date

[signature] 3/2/83
Supervisor Date

NCR # M01-9-2-193

Date Issued 3/14/83

Week Ending 3/11/83

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
310	0BV029E	OGLF	BF102, BFI01	BFI01	BF102			LEDavis WJFriedrich	3/14/83
311	1AA0510A(	1EGA	- - - -	AHA018	AJA20				
312	1AB1703D	1PHT	ASL334 AKE01	ASL333	AKG01	AJA02			
313	1AB5512M	1DGE	- - - -	AHA21	AHA20				
314	1AB5526A	1ALA	- - - -	AKA06	AJL06	AJA06			
315	1AFW082A	1ALA	- - - -	AHA21	AJA20				
316	1AFW138N	1ALA	ATD014	ATD21	AJA21				
317	1AI063A	1GSC	- - - -	ALC18	ALC02B				
318	1AI074A	1DCA	ATB12	- - -					
319	1AI084A	1BCA	ATB12	- - -					
320	1AW019C	OEAA	AP068	AJ464	AP025	AJ429	AP023		
				AJ413	AJ441	AP015	ASL969		
320a	1AW019C	OEAA	1J921	OC180					
321	1BB5401K	OEAA	BSL936	BSL937	BDB01	(Delete This Item DC 6/5/83 Same as #178 on Page 12)			
322	1BB5638A	1ADA	BJH06	- - -					
323	1BB5638B	1ADA	BJH06	- - -					
324	1BB5641Z	1BDB	BJ122	BJ124	BFA18				
325	1BB9005D	1ADA	- - - -	ASL926	BJS13				
326	1BB9011D	1ADA	- - - -	ASL926	BJS13				
327	1BD2107A	OEAA	BFF06	BFF05	BFD16			Delete DC 6/5/83	
328	1BFW081R	1ADA	1NM03177A	1NM03177B					
329	1BFW081S	1ADA	1NM03177A	1NM03177B					
330	1BI030B	1RLC	- - - -	ASL927	BTF011	. . . BTF010	BSL932		
331	1BI064H	1ALA	- - - -	ASL929	BE160				
332	1BI064J	1ALA	- - - -	ASL929	BE160				
333	1BI065H	1ALA	- - - -	ASL929	BE160				
334	1BI065J	1ALA	- - - -	ASL929	BE160				
335	1DQ403C	1SAB	- - - -	ASL926	BJS13				
336	1DQ403M	1SAB	BWW028	BFF03	BWW029	BJQ01			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 3/14/83 — Date

E. Marshburn 3/16/83 — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 3/14/83

Week Ending 3/11/83

	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED			Action Responsibility	Date of Nonconformance
337)	1DQ502F	1SAB	- - - -	ASL926	BE083		LEDavis	3/14/83
338)	1DQ514B	1SBB	- - - -	ASL929	BJS12		WJFriedrich	
339)	1DQ521F	1SEC	- - - -	ASL926	BE083			
340)	1BS509A	1SDB	- - - -	BGC06	BFD27			
341)	1BY3207A	1DGC	BSL172	BSL162	BJA037	BJA04		
			BJA047					
			BJA01					
			BJA02					
			BJA03					
342)	1BY3208A	2DGC	BS171	BSL163	BJA036	BJA04		
			BJA046					
			BJA01					
			BJA02					
			BJA03					
343)	1CI066C	1BBD	CGA01	- - -				
344)	1CI066D	1BBD	CGA01	- - -				
345)	1CQ172A	1SBA	- - -	CG023	CJ680...CG022	CVA99		
346)	1CQ172B	1SBA	- - -	CG023	CJ680...CG022	CVA99		
347)	1CQ172C	1SBA	- - -	CG023	CJ680...CG022	CVA99		
348)	1CQ176A	1SBA	- - -	CG022	CVA99			
349)	1CQ176B	1SBA	- - -	CG022	CVA99			
350)	1CQ176C	1SBA	- - -	CG022	CVA99			
351)	3AA0503AZ	0EAA	AP049	AP049	DELETED	DC 4/15/83		
352)	2AB2327A	2EAC	AJC01	- - -				
353)	2BB2408D	2GNC	BSL422	BSL421	BJF01			
354)	2BD2001AX	2PKB	BKK03	- - -				
355)	2BD2215A	2SAE	BJB06	- - -				
356)	2BFW081Q	2ADA	BFL07	DGF04	BWW013			
357)	2BFW082Q	2ADA	BFL07	DGF04	BWW013			
358)	2B1070J	2PKD	2LIT1312	2LT-1312				

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 3/14/83

Report Originator Date

E. Jones 3/16/83

Supervisor Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 3/14/83

Week Ending 3/11/83

	Schema #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
359)	2BI070K	2BKD	2LIT1312	2LT-1312	LEDavis	3/14/83
360)	2BI070L	2BKD	2LIT1312	2LT-1312	WJFriedrich	
361)	2BI075B	2BBA	BTH01	- - -		
362)	2BI075G	2BBA	BTH01	- - -		
363)	2BI099D	2BBA	BTE04	- - -		
364)	2BI116C	2BBA	- - -	BTG01 BTB06 BTB05		
365)	2BI117C	2BBA	- - -	BTG01 BTB06 BTB05		
366)	2BQ159BH	2SAA	- - -	BFK07 BFK08 BSL908		
367)	2BQ159CA	2SAA	BSL908	BOE08 CSL921	Delete	6/15/83
368)	2BQ159CB	2SAA	BSL908	BOE08 CSL921	Delete	6/15/83
369)	2BQ159CC	2SAA	BSL908	BOE08 CSL921	Delete	6/15/83
370)	2BQ159CD	2SAA	BSL908	BOE08 CSL921	Delete	6/15/83
371)	2BQ159BS	2SAA	BSL908	BOE08 CSL921	Delete	6/15/83
372)	2BQ396V	2BBD	BVA01 BVA98	- - -		
373)	2BV003A	2GJA	BSL423 BFL05 Delete	BSL422 BJF01 BMW022 BFL04	Delete	6/15/83
374)	2BV099G	2GMA	BDA07	- - -		
375)	2BV099H	2GMA	BDA07	- - -		
376)	2BW015F	OEAA	BFJ05	- - -		
377)	2CI069C	2BBD	CGA07	- - -		
378)	2CI069D	2BBD	CGA07	- - -		
379)	2CQ189A	2SDA	- - -	CH018 CH019 CH020	Delete	6/15/83
380)	2CQ189C	2SDA	- - -	CH020 CH019 CH018 CH017	Delete	6/15/83
381)	2CQ192F	2SDA	- - -	CH020 CH019 CH018 CH017	Delete	6/15/83
382)	2AFW138S	2ALA	- - -	AJN09 AFV03 AHA04 (Revise to Read AFU03)		
383)	2AFW138X	2ALA	AFA09 AHB09	- - -		
384)	2AG1102P	2PEA	- - -	AJN09 AFV03 AHA04 (Revise to Read AFU03)		
385)	2AG1107E	2PEA	- - -	AJN09 AFV03 AHA04		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 3/14/83
Report Originator Date

Supervisor 3/16/83
Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # NCI-2-83-171

Date Issued 3/14/83

Week Ending 3/11/83

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	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED			Action Responsibility	Date of Nonconformance
386)	2AG1108G	2PEA	- - -	AJN09	AFV03	AHA04 (Revise to Read AF003)	LEDavis WJFriedrich	3/14/83
387)	2AG1108H	2PEA	- - -	AJN09	AFV03	AHA04 (Revise to Read AF003)		
388)	2AG1113G	2PEA	- - -	AJN09	AFV03	AHA04 (Revise to Read AF003)		
389)	2AQ154N	2SAA	AFN01 AFN02	- - -				
390)	2BB1803D	2PHS	BSL364	BSL363	BKF12			
391)	2BB2402D	2GJA	BJ037	BFB011	BJ036		Delete CC 4/4/83	

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 3/14/83 — Report Originator — Date

E. J. Jones 3/16/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 3/22/83

Week Ending 3/18/83

	Schema #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
392)	0AB6501M	OGDL	ASL975	ASL969	LEDavis/ WJFriedrich	3/18/83
393)	0AB6909A	OEAA	ASL972	ASL971		
394)	0AB6909B	OEAA	ASL972	ASL971		
395)	~~0AW031J~~	~~OEAA~~	~~ASA027~~	~~ASA08 ASA07 ASA06 ASA05~~	~~Delete~~ 6/15/83	
			~~AJ1059~~	~~ASA04 ASA03 ASA014 ASL967~~	~~Delete~~ 6/15/83	
			~~AP045~~		~~Delete~~ 6/15/83	
396)	0BQ429A	2SAB	BGF09	BSL112 BFL13		
397)	1AB5547G	1BDB	AFF01	- - -		
398)	1AS286D	ORLN	AC135	- - -		
399)	1BD2001AE	1PNB	BKC02	- - -		
			BKC03			
400)	1BD2001AF	1PNB	BKC02	- - -		
			BKC03			
401)	1BI070B	1BKD	EQ1LIT1212	EQ. 1J949		
402)	1BI070C	1BKD	EQ1LIT1212	EQ. 1J949		
402a)	1BI070C	1BKD	- - -	BTF08 BTF09 BTF004		
403)	1BI070J	1BKD	EQ1LIT1212	EQ. 1LT-1212		
404)	1BI070K	1BKD	EQ1LIT1212	EQ. 1LT-1212		
405)	1BI070L	1BKD	EQ1LIT1212	EQ. 1LT-1212		
406)	1BY3220B	1BKD	EQ1LIT1212	EQ. 1J949		
407)	2AB5541J	2ALA	2AJH01	- - -		
408)	2AB5541P	2ALA	2AJH01	- - -		
409)	2AB6304A	OEAB	ASA03	- - -		
			ASA02			
			ASA01			
410)	2AB6304B	OEAB	ASA03	- - -		
			ASA02			
			ASA01			
411)	2AFW138Y	2ALA	- - -	AJK03 AJK04 AJK05 AJK06		
412)	2AI067B	DELETED OUTINSTALLED	- - -	AFU99 ~~AFR01~~ AJG13 AFE01		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 3/21/83 — Report Originator — Date

M. G. Schaeffer 3/21/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # [illegible]

Date Issued 3/22/83

Week Ending 3/18/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
413)	2A1068B	DELETED (INSTALLED	- - -	AFU99	AFF01	AJG13	AFE01	LEDavis/ WJFriedrich	3/18/83
414)	2AS688B	2SRA	- - -	AJN09	AFU03	AHA04			
414a)	2AS688B	2SRA	AFU99	- - -					
415)	2AW051D	2EGA	- - -	AJN09	AFU03	AHA04			
416)	2BB2404F	2GLC	- - -	BSL422	BTB05	BKF11		Delete 6/1/83	
417)	2BB2405E	2GLC	- - -	BSL422	BTB05	BKF11			
418)	2BB2406A	2GLC	- - -	BSL422	BTB05	BKF11			
419)	2BB4401A	2GSB	BSL951	BSL952	BJK01				
420)	2BB4402A	2GTB	BSL951	BSL952	BJK01				
421)	2BB4402B	2GTB	BSL951	BSL952	BJK01				
422)	2BB4403A	2BTB	BSL951	BSL952	BJK01				
423)	2BB4403B	2BTB	BSL951	BSL952	BJK01				
424)	2BB5411D	2GMA	BDA07	- - -					
425)	2BB5611A	OECE	- - -	BKF08	BKE02	BKE03			
426)	2BB5611B	OECE	- - -	BKF08	BKE02	BKE03			
427)	2BB5611C	OECE	- - -	BFJ08	BFJ10	BFJ11			
428)	2BB5611F	OECE	- - -	BFJ08	BFJ10	BFJ11			
429)	2BB5612B	2BGE	- - -	BSL923	BTB02	BKF07			
430)	2BB5613A	2PRB	BJB06	BKA06	BKA07	BJB07			
431)	2BB5648M	2ALA	- - -	BFG09	BWW013				
432)	2BI022D	2ALA	BJ062 BWW012	BFL08	BFJ20	BFJ19	BFB11		
432a)	2BI022D	2ALA	BFB012	BFB03	BFB013	BE009			
433)	2BI070B	2BKD	EQ2LIT1312	EQ. 2J1241					
434)	2BQ168E	2BTB	BWW022	BFA05	BJF01	BJ087			
435)	2BY3219A	2BKD	EQ2LIT1312	EQ. 2J1241					

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 5/21/83 — Report Originator — Date

M. T. Schaefer 3/21/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 4/6/83

Week Ending 4/1/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
~~436)~~	~~0AB6501M~~	~~OCDL~~	~~1ASL975~~	~~1ASL969~~ Delete 4/15/83	JEDavis/ WJFriedrich	4/6/83
437)	1AFW139K	1ALA	AFK02	AWW035, AFE02, AFE03		
438)	1BY3205A	1EGA	BSL170, BJA045	BSL164, BJA039, BJA01		
439)	2AB2308H	2GNC	AJH11	-----		
440)	2AB5537D	OGLJ	AFK13, AFK12	-----		
441)	2AQ476E	2BBB	-----	AE047, ASL929, AE046, ASL928, AJG010		
442)	2AQ491K	2BBB	-----	AE047, ASL929, AE046, ASL928, AJG010		
443)	2AQ491L	2BBB	-----	AE047, ASL929, AE046, ASL928, AJG010		
~~444)~~	~~2AQ502A~~	~~2SAB~~	~~AGA10~~	~~AFA11, AGH02~~ Deleted		
445)	2AQ502B	2SAB	AGA10	AFA11, AGH02 Deleted		
446)	2AQ509F	2BNA	-----	AE046, ASL929, AE047		
447)	2AQ510F	2BNA	-----	AE046, ASL929, AE047		
448)	2AQ520F	2SEC	-----	AE240, ASL926, ATF007		
449)	2AS197A	ORLN	ATE09	-----		
450)	2AS311G	2GSC	ASL897	ASL900		
451)	2AV255A	2GNC	-----	AFD01, AFH01, AFC01		
452)	2AV269A	OGDG	-----	AGH02, AFS03, AGL03		
453)	2AY1113F	2SEC	AFS02, AFS03	-----		
454)	2AY3118A	2BKD	AKA12, AKA11, AKA10 AKA09, AJB99	AKA13, AJF12, AJF11, AJF10, AJF09		
455)	2BB5605A	2ECB	-----	BSL921, BKF10, BTB02, BKF09		
456)	2BB5606A	2BGE	-----	BSL921, BKF10, BTB02, BKF09		
457)	2BB5606B	2BGE	-----	BSL921, BKF10, BTB02, BKF09		
458)	2BQ273A	2SBA	BFI01, BE044, BFI02, BFJ23 (Sequence)	BFI01, BFI02, BH044, BFJ23 (Sequence)		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator 4/6/83 Date

Supervisor 4/6/83 Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # [illegible]

Date Issued [illegible]

Week Ending [illegible]

	Schema #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
459)	OBB66021	OEAA	----------	BFF05 BFD15	Delete DC 4/15/87	
460)	1ASP057A	ITS000	----------	AKB01 AKB02		
461)	1ASP057B	ITS000	----------	AKB01 AKB02		
462)	1AW045L	ITS000	AWW017	AFN04 AFN03 AFN02 AFK08, AJB044, AJB14, AJT14		
463)	1BFW140J	1ALA	----------	BFD15 BFD32 BFC04		
464)	1BFW141J	1ALA	----------	BFD15 BFD32 BFC04		
465)	1BI078D	1BGK	----------	BJS07 BJS08		
466)	2AA0503AA	OEAA	AFT05, AFT04	AJL003 AJL01 AJL02 AJL03		
			AFT03, AFT02	AJL04 AFR11 AFQ02 AFQ01		
			AFT01, ASL900	AFC08 AFC07 AFC06 AFC05		
			AFS06, AFS05	AFC04 AFC03 AFK06 ASL995		
			AFS04, AFS03			
			AJN08, AJN07			
			AJN06, AJN05			
			AJN04, ASL894			
			AJN03, AJN02			
			AJN01, AJK01			
			AJK02, AJK003			
			ASL134			
467)	2A1071A	2BKA	ATE09	------		
468)	2A1082C	2RLQ	----------	ASL921 AWW032		
469)	2A1083C	2RLQ	----------	ASL921 AWW032		
470)	2AW019C	OEAA	ASA033	ASA09 ASA08 ASA07 ASA06		
				ASA05 ASA04 ASA02 ASA03		
				ASA025		
471)	2AW016D	2EGA	----------	AFA02 AFA01 AFK09		
472)	2AW019D	OEAA	----------	ASA02 ASA03 ASA025		
473)	2BB2430E	2BKA	BFA01	BFH01 BFB01 BJG001 BFH01		
474)	2BB5616D	2BCA	----------	BKF06 BKC03 BKE03		
475)	2BB5617E	2BCA	BFL09	BFF01 BGF06		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Report Originator [signature] Date 4/15/87 Supervisor [signature] Date 4/23/87

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued

Week Ending

	Scheme #	SUB	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
476)	1B1808C	1RLC	------	ASL926		
477)	2BB5621C	2ECB	------	BFJ08, BFJ10, BFJ11		
478)	2BB5626B	2ALA	------	BSL926, BTB04, BKF03		
479)	2BB5628A	OECC	------	BKA08, BJB08, BKA008		
480)	2BB5628B	OECC	------	BFA13, BFB13, BFC004		
481)	2BB5633A	OHEA	------	BSL926, BTB04, BKF03		
482)	2BB5633B	OHEA	------	BSL926, BTB04, BKF03		
483)	2BB5638A	2ABA	------	BSL927, BTB04, BKF03		
484)	2BB5638B	2ABA	------	BSL927, BTB04, BKF03		
485)	2BB2444B	2BGC	BWW021	BFJ06, BWW022, BFL04		
486)	2AQ502A	2SAB	AGA10 ASL989	AFA11, AGH02...AGK04 (ASL991 ASL1000)		
487)	2AQ502B	2SAB	AGA10, ASL989	AFA11, AGH02...AGK04 (ASL991 ASL1000)		
488)	2AQ502D	2SAB	ASL989	AGK04 (ASL991 ASL1000)		
489)	2AQ502E	2SAB	ASL989	AGK04 (ASL991 ASL1000)		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 4/25/83 — Report Originator — Date

Roger A Jones 4/25/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 5/24/83

Week Ending 5/27/83

	Schema #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED				Action Responsibility	Date of Nonconformance
490)	OBB4617N	OGLH	BJ058	BWW010	BJ056				
491)	OB1060A	OGLH	BE303	BJ1494	BE165	BJ1496	BE163		
				BJ1498					
492)	OBS518A	OSDB	BGB010	BGB11	BGB10	BGB09	BGB08		
				BGB07	BGB06				
493)	1AA0503AA	OEAA	----	AFK06	AFK04	AFE02			
494)	1AB5507J	1EGA	ASL904	ASL903	AJM04				
495)	1BB2425A	1NKB	1S18B (EQ)	BJB020	1NZA88	1NK216	1D37(EQ)		
496)	1BB2425B	1NKB	1S18B (EQ)	BJB020	1NZA88	1NK210	1D37(EQ)		
497)	1BB2425C	1NKB	1S18B (EQ)	BJB020	1NZA88	1NK210	1D37(EQ)		
498)	1BV154E	OGLJ	----	BSL113	BFN01				
499)	2AB2314M	2GLC	----	AFV03	AHA04				
500)	2AB5514B	2BNA	AJD04	AZ104	ATD04	AJD013			
501)	2AB5531A	2PHK	AJH02	----					
502)	2BA0612C	2NGP	BKE03	BKE026	BKD03	BKD04	BJS01		
			BKE04						
503)	2BA0612M	2NGP	BKE03	BKE026	BKD03	BKD02	BKD01		
			BKE02	BKE027					
			BKE01						
504)	2BB2406D	2GLC	BKF11	BSL422	BJF01	BJB04	BJB05		
				BJB06					
505)	2BB5629B	2PNB	----	BKF04	BKK04	BKM03			
506)	2BB5633E	OHEA	BFL02	BGF01	BFJ07				
507)	2BB5634A	2PHL	BSA09	----					
508)	2BB5650H	2BKB	BFJ01	BFJ07	BFJ04	BFJ03	BFJ05		
				BFM05					
509)	2BB5650J	2BKB	----	BFC01	BGB01	BJG01			
510)	2BB6405C	OPHD	----	BKA03	BKL01	BKK04			
511)	2BB9005F	2ABA	----	BJ893	BJ008	BE088			
512)	2BB9004F	2ABA	----	BJ893	BJ008	BE088			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Schan 6/3/83 — Report Originator — Date

M. T. Schaffer 6/3/83 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

Date Issued 5/31/03

Week Ending 6/3/03

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
513)	1AB2325A	1NKA	AJL001	AJL01 Spare (Green) NJ304 NK013		
514)	1AB2325B	1NKA	AJL001	AJL01 Spare (Green) NJ304 NK013		
515)	1AB2325C	1NKA	AJL001	AJL01 Spare (Green) NJ304 NK013		
516	2AW014H	OEAA	AP059	AFA04 AFA05 AFA06 AFA07		
			AJ429	AFA08 AFA09 AFB09 AFB08		
			AP025	AFB07 AFB06 AFB05 AFB04		
			AJ413	AFB03 AFB02 AFB01 AJB01		
			AP091 ← 2AW014N	AJW01 AJL01 AJL02 AJL03		
			AP015 6/1/03	AJL04 AJL006		
			ASL983 6/1/03			
517)	2AW014N	OEAA	ASL990	AP059 AJ429 AP048 AJ413		
			AWW017	AP091 AJ441		
			AFA04			
			AFA05			
			AFA06			
			AFA07			
			AFA08			
			AFA09			
			AFB09, AFB08,			
			AFB07, AFB06,			
			AFB05, AFB04,			
			AFB03, AFB02,			
			AFB01, AJB01,			
			AJW01, AJL01,			
			AJL02, AJL03,			
			AJL04, AJL006			

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Schon 6/3/03 — Report Originator — Date

M. T. Schon 6/3/03 — Supervisor — Date

CABLE ROUTING REINSPECTION PROGRAM

(VIA DISCREPANCIES)

NCR # [illegible]

Date Issued 5/31/83

Week Ending 6/3/83

	Scheme #	SUS	E-37 Via Missed	Cable In Via Not Specified By E-37 ARE UNDERLINED	Action Responsibility	Date of Nonconformance
518)	2BB2424X	2GSA	BE298 BE296 BE294 BJ407 BJ005 BJ408 BE293 BKB031	BFA005 BFA03 BFA02 BFA01 BFH01 BFG01 BJS01 BKE04 BKB03 BKB02		
519)	2BB6401S	OGDL	-----	BSL112 BGF09		
520)	2BB6404R	OEAB	-----	BJS01 BJF01 BJP03 BJP02 BJP010		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Schnur 6/3/83

Report Originator Date

D. T. Schnur 6/3/83

Supervisor Date

NONCONFORMANCE REPORT ATTACHMENT C

CA 87-1

PROJECTS ENGINEERING AND CONSTRUCTION

MO1-9-3-081

1. STARTUP SYSTEM: CD-289 See Attached List	3. PRIORITY CODE: 3	4. CAUSE CODE: (X26) (X23) B-3 (X-11)	5. ACTION ITEM NO: S-2169 (1)
6. PROJECT: MIDLAND PROJECT	7. NONCONFORMING PART ID: Refer to Block #17	8. NONCONFORMING PART NAME: ELECTRICAL CABLE	9. DATE IDENTIFIED: 3/7/83
10. NONCONFORMING PART SERIAL NUMBER: N/A	11. RESPONSIBLE ORGANIZATION: Bechtel Construction/ BOP QC	12. LOCATION IN PLANT: Midland Unit 1 & 2	13. DATE OF NONCONFORMANCE: N/A- See Attached Page 3

14. DISTRIBUTION:
ACTION: ~~LEDavis~~ WJFriedrich GAHierper
INFO: ~~WREind~~ RAMcCue ~~JEBrunner~~ JPKnight ~~JWCook~~ ~~PSorensen~~ ~~MLCurland~~ ~~MADietrich~~ ~~EJFoote~~ ~~CTFollin~~ ~~MHanbury~~ ~~EJones~~ ~~DeBeaudoin~~ ~~WSchaffer~~ DDCochran ~~JWJones~~ DEMiller JAMooney EHPeck JARutgers TKSubramanian DATaggart GWarner RAWells ALAB-

15. NONCONFORMANCE:
E-47 Rev 5 Sect 4.6, Para 4.6.2 Seperation from Class IE Circuits "Non-Class IE Circuits are seperated from Class IE Circuits by minimum seperation requirements specified in Section 5.1.3, 5.1.4, or 5.6, or they become associated cirucits. Sect 4.5 Associated Circuits comply with one of the following: . . . "

16. DISPOSITION:
~~Contrary to the above,~~
~~1) Non-Q Cable 1NI149e is routed thru Q cables in Tray 1AFB02. --Also touching Q-Cables in Tray 1AGH02.~~
~~Location: --Below 1622 in the Lower Spreader Room.~~

SEE PAGE 4 ~~of 9~~ DC 5/20/83) (cont'd on Page 4)

	YES	NO
17. ENGINEERING DISPOSITION REQ:		X
18. G-LIST EQUIP. INVOLVED?	X	
19. PRINTED CA REQ? (SEE BACK)	X	
20. FIELD TAGS APPLIED?		X
21. REPORTABLE PER 50.55(e)?		X

17. NONCONFORMANCE DISPOSITION:
1) Install Cable in correct vias. (LEDavis)
2) Inspect condition of Cable. (WJFriedrich)

22. LOCATION OF TAGS: N/A

23. REPORTED BY:	24. REPORTED TO:	25. DATE OF REPORT:	26. TIME OF REPORT:
N/A	N/A	N/A	N/A

27. NCR GENERATED BY:	28. WRITTEN REPLY REQUIRED:	29. SUPERVISOR'S SIGNATURE/DATE:
DDCochran	4-3-83 See Attached Pg 3	3/7/83

30. PART DISPOSITIVE ACTION PROPOSED:

30A. TECHNICAL DEPT CONCURRENCE/DATE: CPCo Tech (McCue)

30B. CP Co CONSTRUCTION CONCURRENCE/DATE: CPCo Construction (EHPeck)

30C. QA CONCURRENCE/DATE:

RECEIVED JUN 8 1983 QUALITY ASSURANCE

31. PART DISPOSITIVE ACTION VERIFIED:

REVISION: 3 DISCARD PREVIOUS ISSUE

33. VERIFIED BY/DATE:

32. NCR CLOSED BY/SIGNATURE/DATE:

34. NCR ISSUED BY - SIGNATURE/DATE:

BLOCK 13 DATE OF REVISION: (Cont'd from Page 1) BLOCK 30 WRITTEN REPLY

Revision 2 DC 6/7/83 mtl 6/7/83 7/1/83

BLOCK 13 DATE OF REVISION: (Cont'd from Page 1)		BLOCK 30 WRITTEN REPLY REQUIRED
Revision 1	4/6/83	
Revision 2	5/20/83	6/20/83
Revision 3	6/3/83	7/1/83

BLOCK #2 START-UP SYSTEM: --(cont'd from Pg 1)--

ITEM #----------START-UP SYSTEM

1----------1RLB
2----------1RL0
3----------1RLP
4----------1RL6
5----------1ALA
6----------2SAA
7----------2SAB
8----------2SAA
9----------2SAA
10----------2SAA
11----------2ALA

BLOCK #17 NONCONFORMANCE: --(cont'd from Pg 1)--

2)--Q Cable 1GY1307A lying in Non-Q Tray 1NGV02---(Lower Spreader Rm)--

3)--Q Cable 1GY1309A lying in Non-Q Tray 1NGV02---(Lower Spreader Rm)--

4)--Q Cable 1GY1305G lying in Non-Q Tray 1NGV02---(Lower Spreader Rm)--

5)--Q Cable 1GY1306G lying in Non-Q Tray 1NGV02---(Lower Spreader Rm)

6)--Q Cable 2BQ155G and Non-Q Cables has less than 1" of Seperation at 2NPGG36.

7)--Q Cable 2AQ1G3F has less than 1" of seperation between Non-Q Conduits. Located at 1ASL93A below 1GV4.

NOTE: There are other "A" Channel Cables in this area with identicial deficiency as stated above.

8)--Q Cable 2BQ159BL and other "B" Channel Cables routed from EQWC21 into BRJ06 are routed together with Non-Q Cables and lying across Non-Q Conduit 2NPG036.

(Cont'd on Page 4)

BLOCK 17 NONCONFORMANCE: (cont'd from Pg-~~3~~)

~~9) -- Q-Cable-2EQ155F-is-less-than-1"-from-Non-Q-Conduit-2NFG036-and-less-than 6" from Non-Q Cables.~~

~~10) -- Q-Cable-2EQ155E-is-less-than-1"-from-Non-Q-Conduit-2NFG036-and-less-than--- -6"-from-Non-Q-Cables:~~

~~11) -- Q-Cables-2AFW138E-is-resting-on-Non-Q-Conduit-Jumper-2044,-where-cables come-out-of-Tray-ASb086-and-is-routed-to-ASb933.~~

CABLE ROUTING REINSPECTION PROGRAM

/SEPARATION VIOLATION/

NCR # NO1-9-3-081

Date Issued 4/6/83

Week Ending 4/1/83

Schem. #	SUS	PROBLEM DESCRIPTION	LOCATION	Action Respon. bility	Date of Nonconformance
OAB4512D	OGLH	Q-Cable has less than 1" of separation, where cable enter Q-Slot 2ASL998 and Non-Q Conduit 2NPA018.	Aux Bldg Elev 685'-0" Unit 1 & 2 N/K and E/5.9	LEDavis/ WJFriedrich	4/6/83
1AMU085G	1BGA	This cable and other "A" Channel Cables from ASL109 into AFK03 have Non-Q cables coming from a Non-Q slot are laying in Q-Tray AFK03	Aux Bldg Lower Spreader Room N/K and E/5.6		
1AS286J	ORLN	Q-Cable is routed from Q-Conduit 1AC138 into 1AZ116 has less than 6" separation between Q-cables and Non-Q cable coming from Non-Q conduit 1NC220 into 1NZ115.	Aux Bldg Elev 599'-0" S/D and E/5.6		
1AQ154J	1SAA	Q-Cable has less than 1" separation from Non-Q conduits 1CEA002, 1CH020, 1CH019 and 1CH018	Aux Bldg Elev 646'-0" Below EQ1C45 (Process Inst Room) N/M and E/5.9		
1CY1305C	turned over (1RLC)	Q-Cable laying in Non-Q Tray 1NGV02	Lower Spreader Room		
1CY1306A	1ALA	Q-Cable laying in Non-Q Tray 1NGV02	Lower Spreader Room		
1CY1307A	1RLO	Q-Cable laying in Non-Q Tray 1NGV02	Lower Spreader Room		
1CY1309A	1RLP	Q-Cable laying in Non-Q Tray 1NGV02	Lower Spreader Room		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cochran 4/6/83 Jeffrey Chandler 4/6/83

CABLE ROUTING REINSPECTION PROGRAM

/SEPARATION VIOLATION/

NCR # NO1-9-3-081
Date Issued 4/6/83
Week Ending 4/1/83

Scheme #	SUS	PROBLEM DESCRIPTION	LOCATION	Action Responsibility	Date of Nonconformance
1NI149C	1RLB	Non-Q Cable is routed thru Q-cables in Tray 1AFB02. Also touching Q-cables in Tray 1AGH02	Below 1C22 In the Lower Spreader Room	LEDavis/ WJFriedrich	4/6/83
2ABP0313A	2ABB	Q-Cable enters the top of EQ 2C161A thru a 1" nipple. There is a Non-Q cable 2NST013E installed in the same nipple with no separation between Q and Non-Q cables.	Aux Bldg Elev 685'-0" Unit 1 & 2 S/K and E/6.6		
2AFW138E	2ALA	Q-Cable is resting on Non-Q conduit jumper 2C44, where cables come out of tray AJL06 and are routed to ASL933.	Aux Bldg Elev 646'-0" Process Inst Room N/H and E/6.6		
2AFW138S	2ALA	Q-Cable is laying on a Non-Q conduit where Q-cable leaves Q-Tray 2AJL06 and enters Q-slot 2ASL933.	Aux Bldg Elev 646'-0" Process Inst Room N/H and E/6.6		
2AQ403F	2SAB	Q-Cable has less than 1" of separation between Non-Q conduits. NOTE: There are other "A" Channel Cables in this area with identical deficiency as stated above.	At 1ASL934, Below 1C44		
2AST055A	2ABA	Q-Cable is laying on a Non-Q conduit where Q-Cable leaves Q-Tray 2AJL06 and enters Q-slot 2ASL933	Aux Bldg Elev 646'-0" Process Instr Room N/H and E/6.6		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Cohen 4/6/83 E Gordon 4/6/83

CABLE ROUTING REINSPECTION PROGRAM

/SEPARATION VIOLATION/

NCR # NO1-9-1-081
Date Issued 4/6/83
Week Ending 4/1/83

Scheme #	SUS	PROBLEM DESCRIPTION	LOCATION	Action Responsibility	Date of Nonconformance
2BQ155E	2SAA	Q-Cable has less than 1" from Non-Q conduit 2NFG036 and less than 6" from Non-Q cables.	Aux Bldg Elev 674'-6" Upper Spreader Room N/K and E/7.2	LEDavis/ WJFriedrich	4/6/83
2BQ155F	2SAA	Q-Cable has less than 1" from Non-Q conduit 2NFG036 and less than 6" from Non-Q cables	Aux Bldg Elev 674'-6" Upper Spreader Room N/K and E/7.2		
2BQ155G	2SAA	Q-Cable has less than 1" from Non-Q conduit 2NFG036 and less than 6" from Non-Q cables.	Aux Bldg Elev 674'-6" Room N/K and E/7.2		
2BQ159BL	2SAA	This cable and other "B" Channel Cables routed from BWW021 into BFJ06 are routed together with Non-Q cables and laying across Non-Q conduit 2NFG036.	Aux Bldg Elev 674-6" Upper Spreader Room N/K and E/7.2		
2BST013P	2ABB	Q-Cable is routed in EQ 2C161B. There is less than 6" separation inside equip with a Non-Q cable 2NST013K. Also where Q-cable is airlined outside equip. There is less than 6" separation with Non-Q cables.	Aux Bldg Elev 685'-0" Unit 1 & 2 S/J and E/6.6		
2BST014B	2ABB	Q-Cable is routed in EQ 2C161B. There is less than 6" separation inside equip with a Non-Q cable 2NST013E. Also where Q-cable is airlined outside equip there is less than 6" separation with Non-Q cables.	Aux Bldg Elev 685'-0" Unit 1 & 2 S/J and E/6.6		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 41), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Danny Lee 4/6/83 [illegible] 4/6/83

CABLE ROUTING REINSPECTION PROGRAM

/SEPARATION VIOLATION/

NCR # HO1-9-3-081
Date Issued 4/6/83
Week Ending 4/1/83
Page 9 of 9-10 11

Scheme #	SUS	PROBLEM DESCRIPTION	LOCATION	Action Responsibility	Date of Nonconformance
2BSTO15B	2ABB	Q-Cable is routed in EQ 2C161B. There is less than 6" separatioin inside equip with a Non-Q cable 2NSTO13E. Also where Q-cable is airlined outside equip there is less than 6" separation with Non-Q cables.	Aux Bldg Elev 685'-0" Unit 1 & 2 S/J and E/6.6	LEDavis/ WJFriedrich	4/6/83
2CQ211A	2BBC	Q-Cable is tied to a separation channel "B" conduit where cable is airline from equip 2X113 to 2CD002.	Aux Bldg Elev 638'-0" Penetr Unit 2 S/J and W/9.1		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 11), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Dawn Schaar 4/6/83 E Bryan 4/6/83

CABLE ROUTING REINSPECTION PROGRAM

/SEPARATION VIOLATION/

NCR # NO1-9-3-081

Date Issued

Week Ending

Scheme #	SUS	PROBLEM DESCRIPTION	LOCATION	Action Responsibility	Date of Nonconformance
2AQ518B	2BBB	Q-Cable laying on Non-Q 2C44 Jumper Conduit	Aux Bldg Elev 659' Unit 2 Safety-Related EQ Room E/6.6 & H/11		

Inspection results shown have been reviewed as necessary for Process Corrective Action (Block 11), Reportability Evaluation (Block 24) and Reference Criteria Revisions.

Administration Clerk

W. Nestell

Bechtel Associates Professional Corporation

Inter-office Memorandum

To L.H. Curtis

Date November 20, 1980 01659

Subject Midland Plant Units 1 and 2
Bechtel Job 7220
P.O. 7220-E-21
5 & 8 kV Power Cable
P.O. 7220-E-22
600V Power Cable Factory
Rework of Cable Insulation
Distribution

From B.P. Kononetz

Of Engineering

At Ann Arbor

File: E-21PR, E-22PR

Copies to

Reference: IOM, B.P. Kononetz to L.E. Curtis, 6/26/80

Subsequent to the identification of a potential deficiency as stated in the referenced IOM, further investigation has identified additional cable orders subject to the same potential deficiency. This is to document that finding.

In addition, this documents the safety-related basis that should be used in conjunction with a "significancy" analysis, to be done by others, in order to determine whether or not this potential deficiency is reportable under the criteria contained in 10 CFR 50.55(e).

Potential Deficiency: Cables supplied under the subject purchase orders have been delivered to the Midland jobsite with incomplete qualification. Cables supplied under purchase order E-21 may contain insulation which has undergone factory rework which has not been qualified in accordance with the Midland technical specification. Cables supplied under purchase order E-22 do contain insulation which has undergone factory rework which has not been qualified in accordance with the Midland technical specification.

Conclusion: This condition is identified as a potential deficiency which, at this time, is concluded not to have an adverse effect on the safety of operations at the Midland plant.

Basis: The Midland technical specifications do not prohibit the rework of insulation. Factory rework of insulation is allowed by the supplier's standard procedures.

Essex, the supplier for P.O. E-22 cable, has identified the cable reels containing insulation rework. A review of the installation records has shown that Essex cable with factory reworked insulation has been installed in Class 1E applications outside the containment. No Essex cable with factory reworked insulation has been installed in Class 1E applications inside the containment.

Bechtel Associates Professional Corporation

November 20, 1980

01659

The Essex group has agreed to conduct non-LOCA qualification tests for its insulation rework. Essex has analyzed the insulation rework with regard to meeting the qualification requirements and believes cable with insulation rework to be suitable for its intended service.

Kerite cable (P.O. E-21) containing insulation rework has not as yet been identified by cable reel number. Therefore, Kerite cable with insulation rework may have been installed in Class 1E applications outside the containment. No Kerite cable is used in Class 1E applications inside the containment.

The Kerite Company is currently addressing this matter by performing a generic non-LOCA qualification test on reworked samples. Kerite anticipates successful completion of the test and qualification of the cable.

Prepared by: _____
B.P. Kononetz
Electrical Group Supervisor

Concurrence by: _____
R.L. Castleberry
Electrical Chief Engineer

_____
D.F. Lewis
Licensing Engineer

_____
J.N. Vance
Nuclear Chief Engineer

BPK/AJG/pjh
10/31/2

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Written Response Requested: No
Com Use: N/A

Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

October 28, 1983

83-06 #2

J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND ENERGY CENTER PROJECT
DOCKET NOS 50-329 AND 50-330
ELECTRICAL RACEWAY SYSTEM NONCONFORMANCES
FILE: 0.4.9.78 SERIAL: 23834

Reference: J W Cook letter to J G Keppler, same subject:

(1) Serial 23770, dated August 29, 1983

This letter, as was the referenced letter, is an interim 10CFR50.55(e) report concerning nonconformances in Electrical Raceway Systems.

Although Bechtel Project Engineering has determined that deficiencies which have a significant impact on plant safety are not likely to exist, Consumers Power Company will make a final judgement when results from the construction verification program become available. At present, this activity has not started.

Another report, either interim or final, will be sent on or before February 24, 1984.

James W. Cook

JWC/WRB/cd

CC: Document Control Desk, NRC
Washington, DC

RJCook, NRC Resident Inspector
Mid'and Nuclear Plant

DHood, NRC Office of NRR

INPO Records Center

Dupe ~~8311150368~~

OC1083-0029A-MP01

136153

136175

Subject: Management Corrective Action (MCAR) 74

INTERIM REPORT 1

Date: November 30, 1983

Project: Midland Plant Units 1 and 2
Consumers Power Company
Bechtel Job 7220

INTRODUCTION

This report addresses deficiencies in the method of controlling holds and restrictions placed on hardware items, which resulted in the installation of unqualified Essex cables in Midland Units 1 and 2 containment buildings.

DESCRIPTION OF DEFICIENCY

Project engineering restricted installation of Essex cable with factory reworked insulation in the Midland containment buildings. [Ref: TWX, BEBC-4607, 12/18/80 (Com 018473)]. Contrary to the above, the following nonconformances have been identified
(Ref: NCR A-00003):

1. Two Essex cables from reels with factory reworked insulation were installed in Class 1E circuits inside the Unit 2 reactor containment building.

2. Six Essex cables from reels with factory reworked insulation were installed in Class 1E circuits inside the Unit 1 reactor containment building.

3. The possibility exists that other Essex cables with factory reworked insulation (in addition to those identified in 1 and 2 above) are installed in Class 1E circuits inside the Unit 1 and/or 2 reactor containment buildings (indeterminate condition).

Further investigation of the problem indicates that a programmatic deficiency exists in the method of initiating, documenting, and executing engineering holds and restrictions on hardware items and subsequent control of these items at the jobsite.

HISTORICAL BACKGROUND

The cable deficiency was discovered during a MPQAD review of cables installed in Units 1 and 2 containment buildings, resulting in issuance of NCR A-00003. Based on the NCR, a safety concern and reportability evaluation (SCRE) 100 was issued to evaluate the cable deficiency for reportability.

ANALYSIS OF SAFETY IMPLICATIONS

A safety analysis on the eight cables identified on NCR A-00003 has been completed. It was determined that the eight cables included Class 1E circuits for the decay heat return letdown valves and the reactor building recirculating air cooling unit fans required to function in the event of a loss-of-coolant accident and/or main steam line break. It was concluded that because an environmental qualification was not performed on subject cable containing factory reworked insulation for inside containment, the reliability of this cable relative to all design bases was rendered indeterminate and, therefore, if left uncorrected, could have adversely affected the safety of operations of the Midland plant.

PROBABLE CAUSE

Preliminary investigation indicates:

1. Lack of adequate controls and procedures on issuing and enforcing project engineering's holds.

2. The condition necessitating the specific cable hold was not recognized as requiring a nonconformance report.

CORRECTIVE ACTION

1. An in-depth review is being conducted to identify cable installed in the containments for Units 1 and 2 for Class 1E circuits that may have come from subject Essex reels. Additional findings, if discovered, will be documented on NCR A-00003.

2. Remedial corrective action will be determined once the review in 1 above has been completed. Forecast date for completion is December 30, 1983.

3. A review to determine status of other engineering holds and/or restrictions placed on hardware items is in progress. A plan for completion of this activity will be issued by December 30, 1983. Any related hardware which is found to be nonconforming will be documented on a NCR, corrective action implemented, and safety impact determined.

4. A review of engineering, construction, procurement, and QA/QC procedures relating to initiation, documentation, and execution of holds and/or restrictions placed on hardware items is being performed, with a scheduled completion date of December 30, 1983.

136153 136175

5. Formal instruction to appropriate personnel on revised or new procedures concerning initiation, documentation, and control of engineering holds and/or restrictions placed on hardware items will be conducted by January 30, 1984.

6. Investigation into the root cause, and assignment of appropriate corrective action, is in progress. Completion is scheduled for January 30, 1984.

REPORTABILITY

This deficiency was reported to NRC by Consumers Power Company on November 10, 1983.

Submitted by: _____
R.C. Horlar
Project Quality Engineer

Approved by: _____
E.B. Poser
Project Engineering Manager

Concurrence by: _____
J.G. Kovach
Electrical Group Supervisor

Concurrence by: _____
R.L. Castleberry
Chief Electrical Engineer

Concurrence by: _____
E.H. Smith
Engineering Manager

Concurrence by: _____
W. Nielson
Construction Coordinator

Concurrence by: _____
M.A. Dietrich
Project Quality Assurance Engineer

RCH/TJS/hl

UNITED STATES TESTING COMPANY, INC.

December 27, 1983

Memo To: L. Smetana

From: M. Anselmo

Subject: Stop Work Order

Effective immediately, all safety related testing activities are to discontinue. U.S. Testing has been advised this date via telecon with R. Cleary - BPCO. Subcontracts and Wm. Coles and M. Anselmo that memo received from Bechtel dated 12/20/83 requiring turnover of controlled copies of the QA Manual, QAP-1, QCP-4, 6, 22, and 23 constitutes a pullback. (Definition per Bechtel - null and void, rescind approval).

Additionally, maintain a listing of all safety related testing performed since 12/23/83, have this list up-dated on a daily basis and forward copy to Hoboken.

M. Anselmo
Project Manager

MA:mf

cc: J.B. Holdsworth
Wm. Coles
G. Mann
R. Smith

Original in MPMD Safe

12/27/83

Document control date Item location

U.S Testing

Questions

What parties held QA Manuals not up to date?

2 What work was accomplished without a controlled QA manual?

3 What corrective action to prevent all QA manuals from being pulled in future, particularly since U.S Testing had a current manual?

4. Who else was audit/inspection by NRC?

5 Enforcement people?

Focused in U.S Testing pulling all controlled QA manuals while work in progress. Ergo work performed without an approved QA manual

Noticed by Jim Nissenbaum and Glen Murray Sept 1983 on 12/28/83 Copy of 12/27/83 stop work provided.

Indicated Document Control Problem Distribution onsite.

Excluded Quality Control pulled all copies of U.S Testing QA manuals.

John [redacted] Jim Nissenbaum closure of certain items in 95-22 audit

QA Manual will be controlled Concrete Tests

Audit in open Testing was performed / [redacted] written

QA QAR DISTRIBUTION LIST

Actionee: NSwanberg

Info Copy:

JABauer
DEBeaudoin
WRBird
JEBrunner
RBCameron
JWCook
SDeBolt
MADietrich
RJErhardt
GFEwert
BTFoote
AGoel
MHanbury
GBJohnson
DJones/BWMarguglio
WKilker
REMcCue
JKMeisenheimer
JAMooney
RLOliver
DLQuamme
JARutgers
RESevo
PSigner
DThompson/SPDePillo
TKSubramanian
PVanderveer (2)
RAWells
RWheeler
ALAB-2
File
Originator

MIDLAND PROJECT
QUALITY ASSURANCE DEPARTMENT

QUALITY ASSURANCE REQUEST

ORIGINAL

6. QAR NO: RS-00097

7. DATE ISSUED: 12/30/83

8 REV: 0

1. REQUIREMENT:

Specification 7220-C-208 (Q) Revision 26, Section 14.0 requires the Materials Testing Service Subcontractor to work in accordance with a Contractor/MPQAD approved Quality Assurance Program.

9. PAGE 1 OF 3

10. ASME RELATED

☐ YES ☒ NO

2. DEFICIENCY: On 12/23/83, Bechtel Subcontracts Document Control recalled United States Testing's QA Manual and Procedures CA-1, QCP-4, QCP-6, QCP-22 and QCP-23. This recall recinded Bechtel approval of these documents. The activities listed on the attached pages were either performed while UST did not have an approved QA Manual or were not performed on schedule.

NOTE: UST imposed an internal Stop Work Order on 12/27/83 after they received clarification that the document recall constituted a rescinding of approval. (continued page 2)

11. POTENTIAL 50.55(e) YES ☐ NO ☒

3. QAR ORIGINATED BY: JKAdachi J.K. Adachi

4. DISCIPLINE/DIVISION/SECTION: MPQAD/Soils QA

5. RESPONSE DUE DATE: 1-15-84

12. REPORTED TO MPQA MANAGER: DATE N/A

13. ACTION ITEM NO: U-00493

15. ITEM PRIORITY: 3

17. S/U CODE: PGMOO

19. ACTION ORGANIZATION: Bechtel FSO/ Bechtel Project Engineering

20. QAR REVIEWED BY: Joseph P. Colaizzi

14. DISCIPLINE: G/C

16. TREND CODE: F-5

18. RESB CODE: BSC

21. DATE: 12-30-83

22. CAUSE:

23. PROPOSED CORRECTIVE ACTION:

24. RESPONSIBLE ORGANIZATION/PERSON:

25. PROPOSED COMPLETION DATE

26. DISPOSITION CONCURRENCE:

QAR REVIEWER DATE

PQAE (ASME ONLY) DATE

27. DISPOSTION ACTION TAKEN:

28. METHOD OF DISPOSITION VERIFICATION

ACCEPTABLE ☐ UNACCEPTABLE ☐ SUPERCEDING QAR _____

29. QAR CLOSED BY

MPQAD DATE

PFQCE (ASME ONLY) DATE

MIDLAND PROJECT
QUALITY ASSURANCE DEPARTMENT

QUALITY ACTION REQUEST CONTINUATION SHEET

QAR NO: RS-00097
DATE: 12/30/83
REV: 0

DEFICIENCY (Block 2 continued) Work affected by unapproved status of UST QA Manual:

I. The paperwork for the following tests were processed/reviewed: 12/27/83:

(a) C-194 and C-197 System Test for fines (12/22/83) Log Nos. 18231 - 18234
(b) C-194 and C-197 System Test for fines (12/22/83) Log Nos. 18255 - 18261

(c) C-194 and C 197 System Direct flow measurements (12/22/83) OF System, GP System, SWPS System, ME System

(d) C-194 Monthly Well Tests Log Nos. 18262 - 18269
(e) Checking of Compressive Strength Test Packages Set Nos. Sp 1806, Sp 1805, Sp 1847, Sp 1848, Sp 1850, Sp 1800, Sp 1801, Sp 1798, Sp1779
(f) Soils Summary - FSO and BOP

II. The following test activities were performed: 12/27/83

(a) System Tests for fines Log Nos. 18270 - 18276
(b) Monthly Well Test Log Nos. 18277 (Well No. 551)
(c) Compressive Strength Test Set Sp 1850 (Specimens 3091, 3092, 3093)

12/26/83 (a) Compressive Strength Test Set Sp 1848 (Specimens 3073, 3074, 3075)

12/25/83 (a) Compressive Strength Test Set Sp 1847 (Specimens 3064, 3065, 3066)

The following calibrations were performed on 12/27/83:
M & TE Item # UST-482 2610 gm scale #UST-35 20 kg scale

III. The following activities were not performed due to US Testing's SWO:
12/27/83 Direct flow measurements of dewatering systems for the ME, OF, SWPS, GP.

NOTE: NCRS S-00656 and S-00655 were generated on these deficiencies.
12/28/83 Re-sampling of system failures from the tests performed on 12/27/83.

12/27/83 Calibration of Rip-Rap Sieves, M.& TE Item Nos. UST-594, UST-595, UST-596 UST-597, UST-598

IV. Curing tank temperatures for Q-specimens could not be taken without the approved QA Program. The follwoing set no./speciment no. were affected : 5734F/6799, 5579F/5803, 5571/5743, 5734F/6798, 5713F/6659, 5713F/6660, 5694F/6535, 5570F/5737, 5720F/6702, 5720F/6701, 5724F/6730, 5708F/6628, 5708F/6627, 5724F/6729. These specimens are stored in curing tank numbers 2 and 13. However, these tanks also contained (continued page 3)

MIDLAND PROJECT
QUALITY ASSURANCE DEPARTMENT

QUALITY ACTION REQUEST CONTINUATION SHEET

QAR NO:	RS-00097	
DATE:	12/30/83	REV: 0
PAGE 3 OF 3		

DEFICIENCY (Block 2 continued) Non-Q specimens and curing tank temperatures of these tanks were recorded for the Non-Q speimens.

QC NCR DISTRIBUTION LIST

Actionee: DLavelle

Info Copy:

JABauer
DEBeaudoin
WRBird
RBCameron
JWCook
SDeBolt
MFDeWitt
MADietrich
RJErhardt
GFEwert
CTFollin
BTFoote
AGoel
MHanbury
GBJohnson
DJones/BWMarguglio
WKilker
JPKnight
REMcCue
JKMeisenheimer
JAMooney
DLQuamme
RESevo
PSigner
TKSubramanian
DThompson/SPDePillo
PVanderveer (2)
RAWells
RWheeler
ALAB-2
File
Originator

MIDLAND PROJECT
QUALITY ASSURANCE
DEPARTMENT

ORIGINAL

NONCONFORMANCE REPORT

16 NCR NO. S-00655

17 DATE ISSUED 12-28-83

18 REV 0

19. PAGE ___ OF ___

1 ITEM LOCATION "ME" DEWATERING SYSTEM LOCATED AROUND TURBINE BUILDING

2 ITEM DRAWING/PART NO.	3 ITEM PART NAME	4 ITEM SERIAL NO.
N/A	DIRECT FLOW MEASUREMENTS	N/A

5 ITEM DESCRIPTION
DIRECT FLOW MEASUREMENTS FOR THE "ME" DEWATERING SYSTEM.

6 ITEM STARTUP SYSTEM NO.	7 REFERENCE DOCUMENT	8 ASME A.N.I. REQUIRED
NTSOR	7220-C-197 REV 3	☐ YES ☑ NO

9 INSPECTION RECORD NO.	LOG NO.	REV NO.	10 RESPORSIBLE ORGANIZATION
C-2.01-576	251404	0	UNITED STATES TESTING

11 NONCONFORMANCE DISCOVERED DURING:
☐ DESIGN ☐ RECEIVING ☑ CONST ☐ RELEASE FOR INSPECT
☐ POST INSPECT ☐ TURNOVER ☐ POST TURNOVER ☐ PRE-OP TEST ☐ FINAL TURNOVER ☐ OVERINSPECT

12 REQUIREMENT SPEC. C-197 REV 3 SECTION 7.3.1.6 STATES IN PART "THE QUANTITY OF WATER DISCHARGED THROUGH THE SYSTEM OVERFLOW SHALL BE DETERMINED EVERY MONDAY OR THURSDAY. IF MONDAY OR THURSDAY IS A HOLIDAY THE DETERMINATION WILL BE MADE 1 DAY BEFORE OR 1 DAY AFTER THE HOLIDAY."

13 NONCONFORMANCE CONTRARY TO THE ABOVE U.S. TESTING FAILED TO PERFORM A DIRECT FLOW MEASUREMENT FOR THE "ME" DEWATERING SYSTEM ON TUESDAY DECEMBER 27, 1983. (TUESDAY BEING THE DESIGNATED SAMPLING DAY SINCE MONDAY WAS A HOLIDAY.)

14 NCR ORIGINATED BY (PERSON) Dana Dickson 12-29-83 DATE

15 NCR ORIGINATED BY (DISCIPLINE) QC SOILS

20 NUMBER OF HOLD TAGS (IF APPLIED)	21 LOCATION OF HOLD TAGS
0	N/A

22 POTENTIAL 50.55(e)	24 ACTION ITEM NO.	26 ITEM PRIORITY CODE NO.	28 NCR REVIEWED BY:
☐ YES ☒ NO	U-00492	5	Douglas Cooley

23 REPORTED TO MPQA MANAGER	25 DISCIPLINE:	27 TREND CODE	DATE:
DATE NA	G	K-5	12/28/83

CONTINUED ON REVERSE

29 CAUSE

30 PROCESS CORRECTIVE ACTION

☐ YES ☐ NO QAR NO. _____

31 RECOMMENDED DISPOSITION

☐ REWORK ☐ SCRAP/REJECT ☐ REPAIR ☐ USE AS IS

32 CONDITIONAL RELEASE

☐ YES ☐ NO

31A ADDITIONAL INFORMATION

33 DISTRIBUTION FOR ACTION

34 DISPOSITION CONCURRENCE

PROJECT FIELD ENGINEER DATE

MPQAD CONCURRENCE DATE

PFQCE (ASME) DATE

PQAE (ASME) DATE

LEAD DESIGN ORG DATE

CP Co SMO (for turned over systems) DATE

A.N.I. (ASME) DATE

35 DISPOSITION ACTION TAKEN

36 METHOD OF DISPOSITION ACTION VERIFICATION

RESULT OF DISPOSITION ACTION VERIFICATION

☐ ACCEPTABLE ☐ UNACCEPTABLE

IF UNACCEPTABLE, REFERENCE SUPERCEDING NCR NUMBER_____

37 NCR CLOSED BY

MPQAD DATE

A.N.I. (ASME) DATE

QC NCR DISTRIBUTION LIST

Actionee: DLavelle

Info Copy:

JABauer
DEBeaudoin
WRBird
RBCameron
JWCook
SDeBolt
MFDeWitt
MADietrich
RJErhardt
GFEwert
CTFollin
BTFoote
AGoel
MHanbury
GBJohnson
DJones/BWMarguglio
WKilker
JPKnight
REMcCue
JKMeisenheimer
JAMooney
DLQuamme
RESevo
PSigner
TKSubramanian
DThompson/SPDePillo
PVanderveer (2)
RAWells
RWheeler
ALAB-2
File
Originator

COPY

MIDLAND PROJECT
QUALITY ASSURANCE
DEPARTMENT

ORIGINAL

NONCONFORMANCE REPORT

16 NCR NO. S-00656

17 DATE ISSUED 12-28-83

18 REV 0

19 PAGE ___ OF ___

1 ITEM LOCATION THREE SEPERATE DEWATERING SYSTEMS LOCATED AROUND THE SERVICE WATER PUMP STRUCTURE AND CIRCULATING WATER INTAKE STRUCTURE

2 ITEM DRAWING/PART NO. N/A

3 ITEM PART NAME DIRECT FLOW MEASUREMENTS

4 ITEM SERIAL NO. N/A

5 ITEM DESCRIPTION DIRECT FLOW MEASUREMENTS FOR THE PERMANENT GRAVEL PACKED, "OF" AND SERVICE WATER PUMP STRUCTURE DEWATERING SYSTEMS.

6 ITEM STARTUP SYSTEM NO. NTSOR

7 REFERENCE DOCUMENT 7220-C-174, REV 6

8 ASME A.N.I. REQUIRED ☐ YES ☒ NO

9 INSPECTION RECORD NO.S C-201-573, 574, 575

LOG NO. 25/402, 25/402, 25/403

REV NO. 8 8

10 RESPONSIBLE ORGANIZATION UNITED STATES TESTING

11 NONCONFORMANCE DISCOVERED DURING: ☐ DESIGN ☐ RECEIVING ☑ CONST ☐ RELEASE FOR INSPECT ☐ POST INSPECT ☐ TURNOVER ☐ POST TURNOVER ☐ PRE-OP TEST ☐ FINAL TURNOVER ☐ OVERINSPECT

12 REQUIREMENT SPEC. C-194 REV 6 SECTION 6.5.3.b STATES IN PART "THE QUANTITY OF WATER DISCHARGED THROUGH THE SYSTEM OVERFLOW SHALL BE DETERMINED EVERY MONDAY OR THURSDAY. IF MONDAY OR THURSDAY IS A HOLIDAY THE DETERMINATION WILL BE MADE 1 DAY BEFORE OR 1 DAY AFTER THE HOLIDAY."

13 NONCONFORMANCE CONTRARY TO THE ABOVE U.S. TESTING FAILED TO PERFORM A DIRECT FLOW MEASUREMENT FOR THE PERMANENT GRAVEL PACKED, "OF" AND SERVICE WATER PUMP STRUCTURE DEWATERING SYSTEM, ON TUESDAY DECEMBER 27 1983. (TUESDAY BEING THE DESIGNATED SAMPLING DAY SINCE MONDAY WAS A HOLIDAY)

14 NCR ORIGINATED BY (PERSON) Dana Dickson 12-28-83 DATE

15 NCR ORIGINATED BY (DISCIPLINE) QC-SOILS

20 NUMBER OF HOLD TAGS (IF APPLIED) 0

21 LOCATION OF HOLD TAGS N/A

22 POTENTIAL 50.55(e) ☐ YES ☒ NO

24 ACTION ITEM NO. U-00491

26 ITEM PRIORITY CODE NO. 5

28 NCR REVIEWED BY: Douglas Awtry

23 REPORTED TO MPQA MANAGER DATE NA

25 DISCIPLINE: G

27 TREND CODE R-5

DATE: 12/28/83

CONTINUED ON REVERSE

18 of 24

Trial

As of the date of this report a significant amount of electrical cable installations, cable terminations, raceway installations, and equipment installations has been completed at the Midland Site. The bulk of present ongoing work activities continues to reflect these activities. Overall construction status is estimated to be ~~complete~~ as follows:

a. Conduit installations 91 %

b. Wire and cable installations 91 %

c. Cable terminations 79 %

d. Cable tray installations 100 %

e Equipment installations 98 %

Inspection conducted during the month of October, 1982 has found additional problems related to the installation and inspection of hangers in the Diesel Generator Building. The concern involves hangers that are built to seismic category one standards, but are considered "non-Q" by system designation. Consumers has taken exception to Reg. Guide 1.79 titled "Seismic Design Classification", which delineates requirements for non-Q systems which could impact safety related systems during a seismic event. A letter from NRC Region III has been sent to NRR requesting resolution.

C. CONSTRUCTION STATUS

1. MECHANICAL

As of the date of this report, a significant amount of small and large bore piping has been completed at the Midland Site. The bulk of present ongoing work activities involve hanger and instrument impulse line installation. Mechanical construction status is estimated to be ~~approximately 65 percent complete.~~ as follows:

a. Large pipe installation 98% complete
b. Large pipe hangers & installation 95% complete
c. Small pipe installation 95% complete
d. Small pipe hangers 81% complete
e. Mechanical equipment 99%

1B44

B. Communications

2. Management Meetings

Management Meeting to Discuss Violation of the ASLB Order of April 30, 1982

A management meeting was held at the Midland site on August 11, 1982, between Mr. A. Davis, members of the Region III Midland Section, Mr. D. Hood of NRR, and Mr. J. Cook and others of the licensee's staff. The purpose of the meeting was to discuss what members of the Region III staff perceive to be a violation of the ASLB Order of April 30, 1982 in that the licensee excavated below the deep 'Q' duct bank and initiated fireline relocation activities in 'Q' soils, without prior NRC authorization.

3. Public Meetings

Public Meeting to Discuss the Licensee's Response to the Systematic Assessment of Licensee's Performance (SALP)

A meeting was held at the Holiday Inn in Midland, Michigan on August 5, 1982, between Mr. R. F. Warnick, members of the Region III Midland Section, and Mr. Roy Welles and others of the licensee's staff. The purpose of the meeting was to clarify any disputed issues regarding the SALP Report, for the period of July 1, 1980 through June 30, 1981 and the licensee's May 17, 1982 response to this report.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 09 1983

Docket Nos. 50-329/330 OM, OL

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

Dear Mr. Cook:

Subject: Construction Completion Schedule for Midland

On April 19-21, 1983, the NRC staff visited the Midland Plant to evaluate construction completion schedules. The meeting discussed the basis for Consumer's revised estimates of October 1984 (Unit 2) and February 1985 (Unit 1). On April 20, 1983, the staff conducted an tour of both units to observe construction progress.

The staff believes that your estimate of 14 months to complete preoperational and acceptance testing for both units is unduly optimistic. Recent experience for a single unit has indicated that this activity will require at least 24 months to complete. Moreover, the staff believes that your forecast does not realistically account for large uncertainties in the work that must precede start of critical path testing, and that this can be expected to add some months to your schedule. These factors alone would infer that your October 1984 projected completion date is optimistic by at least a year.

Since the staff's visit, you have requested an opportunity to meet with the staff to review the material previously provided as well as to provide any additional information for its further consideration in this matter. We also understand that you plan to reconsider your scheduling priorities between Units 1 and 2 in light of recent actions by Dow Chemical Company. At your request, we will be scheduling this meeting in September. A final staff position for Midland's construction completion date will be developed following this further meeting.

Sincerely,

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing
Office of Nuclear Reactor Regulation

Dupe 8308160064 1pp

cc: See next page

MIDLAND

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

cc: Michael I. Miller, Esq.
Ronald G. Zamarin, Esq.
Alan S. Farnell, Esq.
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Assistant Attorney General
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720 Law Building
Lansing, Michigan 48913

Mr. Wendell Marshall
Route 10
Midland, Michigan 48640

Mr. R. B. Borsum
Nuclear Power Generation Division
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Mr. Don van Farrowe, Chief
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Mr. Steve Gadler
2120 Carter Avenue
St. Paul, Minnesota 55108

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
Route 7
Midland, Michigan 48640

Ms. Barbara Stamiris
5795 N. River
Freeland, Michigan 48623

Mr. Paul A. Perry, Secretary
Consumers Power Company
212 W. Michigan Avenue
Jackson, Michigan 49201

Mr. Walt Apley
c/o Mr. Max Clausen
Battelle Pacific North West Labs (PNWL)
Battelle Blvd.
SIGMA IV Building
Richland, Washington 99352

Mr. I. Charak, Manager
NRC Assistance Project
Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439

James G. Keppler, Regional Administrator
U.S. Nuclear Regulatory Commission,
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

2855

James W Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

June 10, 1983

Mr J G Keppler, Administrator, Region III
Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR COGENERATION PLANT
MIDLAND DOCKET NOS 50-329, 50-330
CONSTRUCTION COMPLETION PROGRAM
FILE 0655 SERIAL 23255

Reference

1. Letter to Mr J G Keppler dated January 3, 1983, from Mr J W Cook regarding Construction Completion Program.

The enclosure to this letter is a revision to the Construction Completion Program description submitted on June 3, 1983 (Reference 1). The revisions incorporate the comments and changes suggested by Region III staff.

NRC release points following Project Management review of plans and performance on major activities are incorporated directly in the body of the text (Section 5). In addition, an expanded description of special activities, such as installation of pipe hangers and watertight doors is provided (Section 4.5). Other changes were made to provide clarification; the intent of Reference 1 has not been changed. All changes are indicated with a margin slash to facilitate identification.

The Quality Verification Program which is included as an appendix to the Construction Completion Program has been revised to provide a 100% verification program for accessible portions of items associated with the use of the Attachment 10 form.

Dupe ~~8306300105~~ 3pp

oc0683-4032a-66

We trust that these revisions fulfill your request for clarification and incorporation of the NRC release points in the Construction Completion Program document.

James W. Cook

JWC/DMB/klc

CC Atomic Safety and Licensing Appeal Board
CBechhoefer
FPCowan, ASLB
JHarbour, ASLB
DSHood, NRC
MMCherry
RWHernan, NRC
RJCook, Midland Resident Inspector
FSKelley
HRDenton, NRC
WHMarshall
WDPaton, NRC
JJHarrison, NRC
RFWarnick, NRC
BStamiris
MSinclair
LLBishop

CONSUMERS POWER COMPANY
Midland Units 1 and 2
Docket No 50-329, 50-330

Letter Serial 23255 Dated June 10, 1983

At the request of the Commission and pursuant to the Atomic Energy Act of 1954, and the Energy Reorganization Act of 1974, as amended and the Commission's Rules and Regulations thereunder, Consumers Power Company submits Revision 1 to its Construction Completion Program.

CONSUMERS POWER COMPANY

By J. W. Cook
J W Cook, Vice President
Projects, Engineering and Construction

Sworn and subscribed before me this 11th day of June 1983.

Alva C Robinson
Alva C Robinson - Notary Public
Jackson County, Michigan

My Commission Expires October 1, 1986

mi0683-4032a168

MIDLAND NUCLEAR COGENERATION PLANT
Docket No-50-329, 50-330

CONSTRUCTION COMPLETION PROGRAM

Consumers Power Company
June 10, 1983

Dupe ~~8306300109~~ 38pp.

Revision 1
m10683-4033a-66-168

TABLE OF CONTENTS

CONSTRUCTION COMPLETION PROGRAM

Executive Summary

The Construction Completion Program has been formulated to provide guidance in the planning and management of the construction and quality activities necessary for completion of the construction of the Midland Nuclear Cogeneration Plant. Construction completion is defined in this Plan as carrying all systems to the point they are turned over to Consumers Power Company for component checkout and preoperational testing. The Construction Completion Program does not include the Remedial Soils Program which is treated in separate interactions between Consumers Power Company and the Nuclear Regulatory Commission.

Background

The Construction Completion Program was developed in response to a number of management concerns that have been identified during the period preceding the initiation of the Program. The Midland Project had been proceeding at a high level of activity as it approached completion. The final transition from area construction to system completion, using punch lists, has been difficult for most nuclear projects. The Midland Project has not escaped these difficulties which have been compounded due to the congested space and the continuing numerous design changes, both generally attributable to the age of the Project. These factors lead to the need for improved definition of work status, increased emphasis on overall Project objectives as well as continued focus of construction and inspection resources on completion of systems for short-term milestones and increased effort to complete engineering ahead of field installation.

The Midland Project has been criticized by the NRC regional office as not having met their expectations for implementation of the Project's Quality Assurance Program. The result has been that the Project management has too often, during the months preceding this Program, been in a reactive rather than proactive posture with regard to quality assurance matters.

In recognition of these conditions, management has concluded that a change in approach was needed to effectively complete the Project while maintaining high quality standards.

Objectives

The development of the Program has considered the Project's current status and recent history and attempts to address the underlying or root causes of the problems currently being experienced. In order to develop the Program the following overall objectives were established under three general headings. The Program Must:

Improve Project Information Status By:

- Preparing an accurate list of to-go work against a defined baseline.
- Bringing inspections up-to-date and verifying that the quality of completed work is acceptable.
- Maintaining a current status of work and quality inspections as the Project proceeds.

Improve Implementation of the QA Program By:

- Expanding and consolidating Consumers Power Company control of the quality function.
- Improving the primary inspection process.
- Providing a uniform understanding of the quality requirements among all parties.

Assure Efficient and Orderly Conduct of the Project By:

- Establishing an organizational structure consistent with the remaining work.
- Providing sufficient numbers of qualified personnel to carry out the program.
- Maintaining flexibility to modify the Plan as experience dictates.

Description

The Construction Completion Program entails a number of major changes in the conduct of the final stages of the construction process and can be described in summary as a two-phase process.

First, after certain necessary preparations, the safety-related systems and areas of the plant will be systematically reviewed. This first phase will be carried out on an area-by-area basis, but will be accomplished mainly by teams organized with systems responsibility and a separate effort to verify the completed work. The product from this phase of the program will be a clear status of remaining installation work and a current inspection status which provides quality verification of the existing work. The teams organized to carry out this first phase will continue to function in the second phase as the responsible organizational units to complete the work.

In order to achieve its complete set of objectives, the Program contains a number of activities and elements that support and are linked to the two major phases described above. The major components of the Plan, which are discussed in more detail in the balance of this report, can be described as follows:

- A significant reduction in the construction activity in the safety-related portion of the plant, material removal and a general cleanup has been carried out in preparation for installation and inspection status assessment and quality verification activities.

- A review has been made of equipment status to assure that the proper lay-up precautions have been implemented to protect the equipment until the installation work is completed.

- The integration of the Engineer/Constructor QC function into the Midland Project Quality Assurance Department (MPQAD) under Consumers Power Company management has been completed.

- MPQAD is carrying out a recertification program of QC inspectors, and review of the inspection procedures to be utilized.

- The completion teams are being organized, staffed and trained according to procedures developed to define the team's work process.

- The completion teams will 1) accomplish installation and inspection status assessment, 2) complete installation and ensure quality inspections are performed and 3) determine that all requirements have been met prior to functional turnover for test and operation.

- Quality verification of completed work will be carried out in parallel with installation and inspection status activities of the completion teams.

- A series of management reviews are being carried out to carefully monitor the development and conduct of the Program and to revise the plan as appropriate.

- Review and resolution will proceed on outstanding issues related either to QA program or QA program implementation as raised by the NRC or third party overviews of the Project.

- Third party reviews are being undertaken to monitor Project performance and to carry out the NRC's requirements for independent design verification.

Status

The Program was initiated on December 2, 1982 by limiting certain ongoing safety-related work and starting preparations for the phase-one work of status assessment and quality verification activities. Since the Program also has incorporated a number of commitments made to the NRC during the period prior to December 2, 1982, activities in support of these commitments such as QC integration into MPQAD and the recertification of QC inspectors, had been initiated prior to December.

Milestones for each element of the Plan are enumerated in the text. In general, preparation for the Phase 1 activities are in place and the

management reviews are being held. A pilot team is developing the procedures and training requirements. It is expected that the Phase 1 will begin shortly.

The Program provides for the Phase 1 results on an area, system, or partial system to be reviewed and evaluated prior to initiating Phase 2 system completion work on that system or partial system. Management will monitor both process readiness and Phase 1 evaluation results.

The major areas of continuing safety-related work outside the Construction Completion Program are NSSS construction as performed by B&W Construction Co, HVAC work under the Zack subcontract, the Remedial Soils Program and post-turnover punch list work released to Bechtel Construction by Consumers Power Company.

During the continuing implementation of the Program in 1983, the NRC Region III can use the Plan to monitor safety-related construction activities at the site. Since a substantial portion of the Plan directly relates to commitments made to NRC management, Consumers Power Company intends to schedule periodic reviews of Program status and progress with the NRC.

1.0 INTRODUCTION

The Construction Completion Program has been formulated to provide guidance in the planning, and implementation of the construction and quality activities necessary for completion of the construction of the Midland Nuclear Cogeneration Plant. Construction completion is defined in this Plan as carrying all systems to the point they are turned over to Consumers Power Company for component checkout and preoperational testing. The Construction Completion Program does not include the Remedial Soils Program which is treated in separate interactions between Consumers Power Company and the Nuclear Regulatory Commission. The Construction Completion Program will be referred to as the Program in this document which contains the Plan for Program development and implementation.

Background

The Construction Completion Program was developed in response to a number of management concerns that were identified during the period preceding the initiation of the Program. The Midland Project had been proceeding at a high level of activity as it approached completion. The final transition from area construction to system completion, using punch lists, has been difficult for most nuclear projects. The Midland Project has not escaped these difficulties which have been compounded due to the congested space and the continuing numerous design changes, both generally attributable to the age of the Project. These factors lead to the need for improved definition of work status, increased emphasis on overall Project objectives as well as continued focus of construction and inspection resources on completion of systems for short-term milestones and increased effort to complete engineering ahead of field installation.

The Midland Project has been criticized by the Nuclear Regulatory Commission regional office as not having met their expectations for implementation of the Project's Quality Assurance Program. The result has been that the Project management has too often, during the months preceding this Program, been in a reactive rather than proactive posture with regard to quality assurance matters.

In recognition of these conditions, Consumers Power Company concluded that a change in approach is needed to effectively complete the Project while maintaining high quality standards.

Objectives

The development of the Program has considered the Project's current status and recent history and attempts to address the underlying or root causes of the problems currently being experienced. In order to develop the Program, the following overall objectives were established under three general headings. The Program must:

Improve Project Information Status By:

- Preparing an accurate list of to-go work against a defined baseline.

More defined by CPCo

Non QAP- IRS

- Bringing inspections up-to-date and verifying that the quality of completed work is acceptable.

- Maintaining a current status of work and quality inspections as the Project proceeds.

Improve Implementation of the QA Program By:

- Expanding and consolidating Consumers Power Company control of the quality function.

- Improving the primary inspection process.

- Providing a uniform understanding of the quality requirements among all parties.

Assure Efficient and Orderly Conduct of the Project By:

- Establishing an organizational structure consistent with the remaining work.

- Providing sufficient numbers of qualified personnel to carry out the Program.

- Maintaining flexibility to modify the Plan as experience dictates.

Plan Contents

The Program was initiated on December 2, 1982 by limiting on-going work on Q-systems to pre-defined tasks and preparing the major structures housing Q-systems for an installation and inspection status assessment and verification of completed work. The relationship of the major elements of the Plan is shown in Figure 1-1. The sections of the Plan address the following major activities:

The buildings are being prepared for a status assessment of incomplete work and verification of completed work.

A new quality organization that integrates the QA and QC functions under a Consumers Power Company direct reporting relationship has been established. As part of this transition, the Engineer/Constructor QC inspectors are being recertified to increase confidence in the quality inspection performance.

The overall Plan for the Program is being developed in two major phases.

The first phase includes:

- A team organization assigned on the basis of systems developed to determine present installation and inspection status. The installation status assessment includes a comparison of partially

installed work to current design and identification of remaining work items for completion. The inspection status assessment includes the Team Quality Representative requesting MPQAD to perform additional inspections using recertified inspectors on partially completed or completed work to bring inspections up to date. A closely coordinated effort involving the Engineer/Constructor and Consumers Power Company (QA/QC, testing and construction) personnel will improve quality performance. Separate teams are also being assigned to work area type commodities such as cable trays and doors. (ie, commodities not related to a particular system.)

- The quality verification of completed work initiated on a 100% basis using re-certified inspectors.

The second phase includes:

- Work completion, following quality verification, installation and inspection status assessment under responsibility of the team organization.

- An integration of the QC inspection process for new work with the completion work to ensure adequate quality performance.

The first phase implementation of the Program will be initiated with a review of the process, procedures and team assignments that will be used. The plan for verification of completed work will be reviewed separately. Verification of completed and previously inspected work will be carried out by MPQAD in accordance with the Quality Verification Plan, in coordination with the team effort. The teams will conduct the installation and inspection status assessment; as part of this effort MPQAD will be requested to bring inspections up to date on partially completed or completed work. Following Phase 1 completion of the first verification and status assessment segment, a management review will be made of the evaluation of the initial Phase 1 results and the process and procedures for Phase 2 activities. In second phase Program implementation, the assigned team will plan and carry out the remaining work needed for completion including QC inspections.

The adequacy and completeness of the quality program will be reviewed, as appropriate, on an ongoing basis, taking into consideration questions raised by NRC inspections and findings by third party reviewers.

Independent assessments of the Midland Project will provide management and NRC with evaluations of Project performance.

The on-going work to protect plant equipment and systems will be augmented as necessary to provide adequate protection during implementation of this Plan.

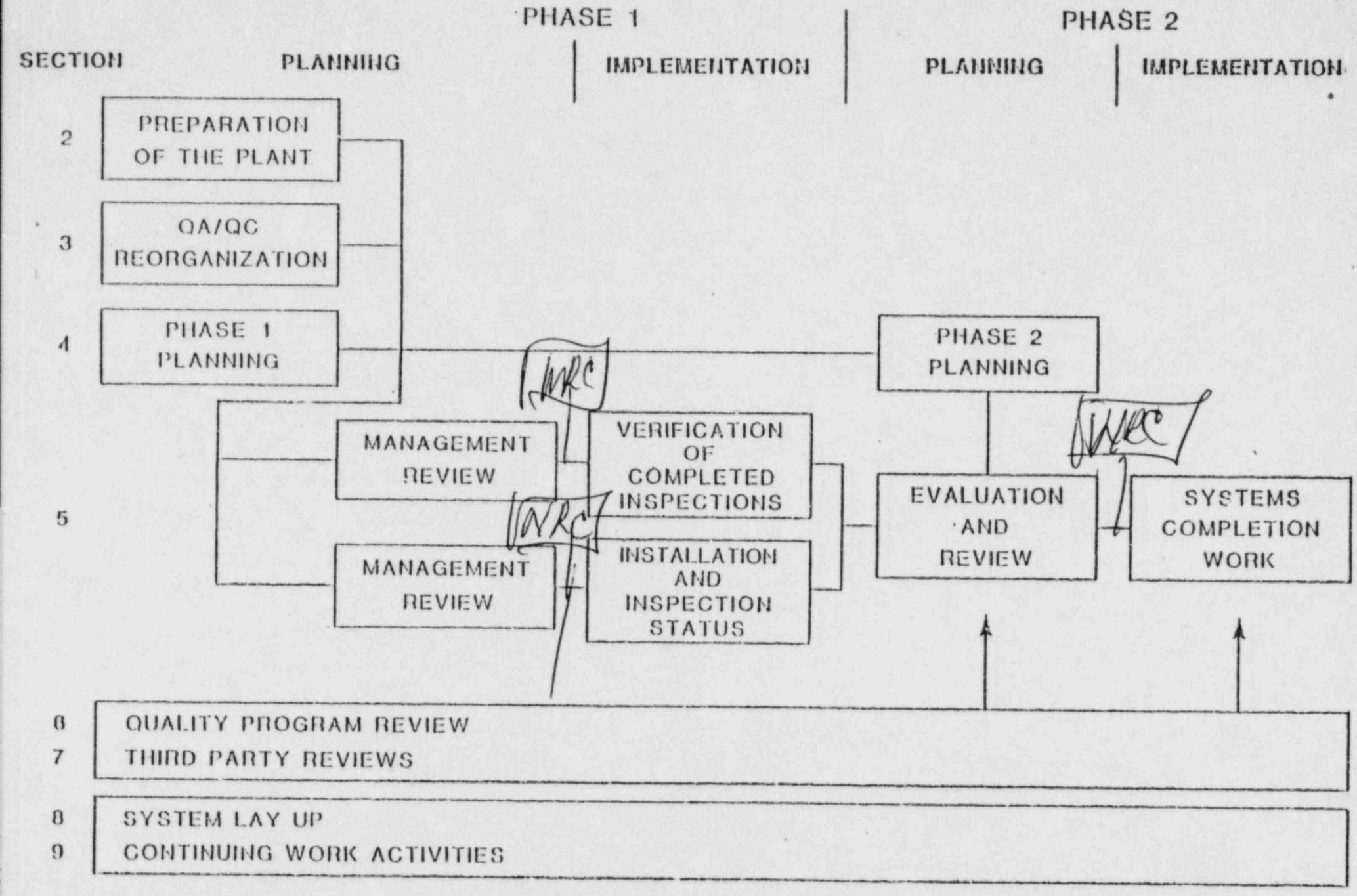
Work on Q-Systems has been limited to specific activities. This limitation permits important work to proceed outside of the Construction Completion Program while allowing building preparation for status assessment and verification activities on that work which is under the Construction Completion Program.

Summary

The program is a comprehensive plan to complete the Midland Nuclear Cogeneration Plant in a manner that assures the licensibility of the plant when construction is complete. Cost and schedule for completion of the Midland Project are also a concern for Consumers Power Company. The Company believes that the most efficent way to project completion is to understand the current plant status, establish the requirements to finish the project and complete the work according to these requirements. Thus the theme of the Construction Completion Program to verify past work and proceed on future work with improved performance is consistent with this philosophy.

FIGURE 1-1

CONSTRUCTION COMPLETION PROGRAM SCHEMATIC



2.0 PREPARATION OF THE PLANT

2.1 Introduction

The preparation of the Plant cleared the auxiliary, diesel generator and containment buildings and the service water pump structure of materials, construction tools and equipment and temporary construction facilities.

2.2 Objective

To allow improved access to systems and areas for the Program activities.

2.3 Description

The preparation activities minimize obstacles and interferences for the Program activities. This is being accomplished through the following steps.

1. Limitation of Q-work to specific activities and areas defined in Section 9 resulting in substantial work force reduction.

2. Removal and storage of construction tools and equipment, and temporary construction facilities (scaffolding, etc) from the buildings identified in Section 2.1.

3. Removal, control and storage of uninstalled materials from the buildings identified in Section 2.1.

4. Appropriate housekeeping of all areas following material and equipment removal.

The preparation for each area will be complete before initiating further Program activity. The on-going work described in Section 9 will continue as scheduled during the preparation of the Plant for CCP activities.

2.4 Milestones

Complete preparation of affected areas of the plant. (Complete)

3.0 QA/QC ORGANIZATION CHANGES

3.1 Introduction

The Consumer Power Company's Midland Project Quality Assurance Department (MPQAD) was expanded to assume direct control of site project quality functions including Engineer/Constructor QC except ASME. The new organization is described below. The transferred QC Inspectors are being recertified as part of this transition.

3.2 Objectives

Establish New QA/QC Organization

Establish an integrated organization which includes the transition of Engineer/Constructor QC to MPQAD while accomplishing the following objectives:

1. Establish direct Consumers Power Company control over the QC inspection process.

2. Establish the responsibilities and roles of the QA and QC Departments in the integrated organization.

3. Use qualified personnel from existing QA and QC departments and contractors to staff key positions throughout the integrated organization.

Recertify QC Inspectors

Ensure that those Quality Control inspection personnel transferring to MPQAD will be trained and recertified in accordance with MPQAD Procedure B-2M-1.

3.3 Description

Establish New QA/QC Organization

A new organization was implemented under Consumers Power Company and has been described in the appropriate Topical Report (CPC-1A), the FSAR and quality program manuals (Volume II, BQAM and NQAM). Changes to CPC-1A were approved by NRC on March 14, 1983.

Features of the new organization include:

1. Lead QC Supervisors report to a QC Superintendent who reports to the MPQAD Executive Manager. Any required support from Bechtel Corporate QC and QA functions (except ASME N-Stamp activities) is provided at the level of the MPQAD Executive Manager.

2. The MPQAD Executive Manager will review the performance of lead personnel in his department.

3. QA will develop and issue Quality Control inspection plans and be responsible for the technical content and requirements of such plans. QC will be responsible to implement these plans.

4. QA will continue to monitor the Quality Control inspection process to insure that program requirements are satisfactorily implemented.

5. MPQAD will continue to use Bechtel's Quality Control Notices Manual (QCNM) and Quality Assurance Manual (BQAM) as approved for use on the Midland Project.

6. ASME requirements imposed upon a contractor as N-Stamp holder will remain with that contractor. MPQAD QA will monitor the implementation of ASME requirements.

An organization chart (Fig 3-1) showing current reporting relationships is attached. The official organization chart is contained in project procedures.

Training of MPQAD Personnel

MPQAD initiated a program in late 1982 to retrain and recertify all Engineer/Constructor QCE's (Inspectors) to existing PQCIs. A significant number of QCE's have been recertified under this process. Early in 1983, MPQAD decided to terminate recertification of old PQCIs except in selected cases, focus efforts on completing the review and revision of PQCIs, and then train and recertify to the new PQCIs.

MPQAD current plans are to re-train and re-certify all inspectors to the revised PQCIs. As a part of this activity, the Project Quality Control Instructions (PQCI) are undergoing a complete review to assure:

Attributes that affect the safety and reliability of specific components, systems and structures are identified for verification.

Accept/reject criteria are clearly identified.

Appropriate controls, methods, inspection and/or testing equipment are specified.

Requisite skill levels are required per ANSI N45.2.6 or SNT-TC-1A.

After the PQCIs are revised as necessary, Quality Control Engineers (Inspectors) are being trained and must pass an examination and demonstration test to assure their proficiency in utilizing the new instruction. Upon successful completion, each inspector is being certified to perform inspections to those PQCIs in which he was trained.

The adequacy of PQCIs prior to training is assured by the following programmatic requirements:

1. The PQCI evaluation effort is being conducted under the direction of MPQAD QA personnel. MPQAD Procedure E-3M was issued April 11, 1983 and establishes the responsibilities and requirements for the preparation, revision, and control of PQCIs by QA personnel.

   As a part of the initial PQCI revision process, Project Engineering does a review of the PQCI for MPQAD to assist in ensuring that attributes that affect safety have been identified for inspection, and further to ensure that the PQCI is consistent with the specification requirements and that clarifications are made to specifications wherever necessary. The final responsibility for the content of the inspection plan remains with MPQAD-QA.

2. Whenever a PQCI is revised, the revision is evaluated to determine if a pilot run for testing the implementing capability of the PQCI is required. If a pilot run is required, the PQCI is tested by a team from QA, QC and Training. Based on this pilot run, the PQCI may be further revised.

3. Once the PQCI is ready for issue, an effectivity date is established in conjunction with the Training Department.

   A. For PQCIs on which training was not previously conducted, the training and certification process is then started.

   B. For PQCIs on which training and/or certification was previously conducted, a determination is made as to the need for retraining or recertification. When a revised PQCI is issued, it is evaluated in accordance with established procedures to determine if retraining and recertification is required. Based on this evaluation, appropriate action is taken.

4. During the training process, student questions (see below) are solicited and monitored. Based on this, further revision to a PQCI may be initiated.

Steps taken to ensure all questions raised during PQCI training sessions are resolved prior to certification include:

1. The development of an MPQA Department "Statement of Training Policy." A copy of the current Policy is included as Figure 3-2.

2. The Policy Statement is handed out at the start of each class and reviewed with the trainees.

3. Statement 2 of the Policy deals with student questions. Instructors handle many questions as a routine part of a class. However, when an instructor is faced with questions he cannot answer, he makes note of them for subsequent resolution with the students.

4. When the instructor determines the need, a QA Engineer, Project/Resident Engineer or other resource person is scheduled to participate as part of the class and answer questions raised by the students.

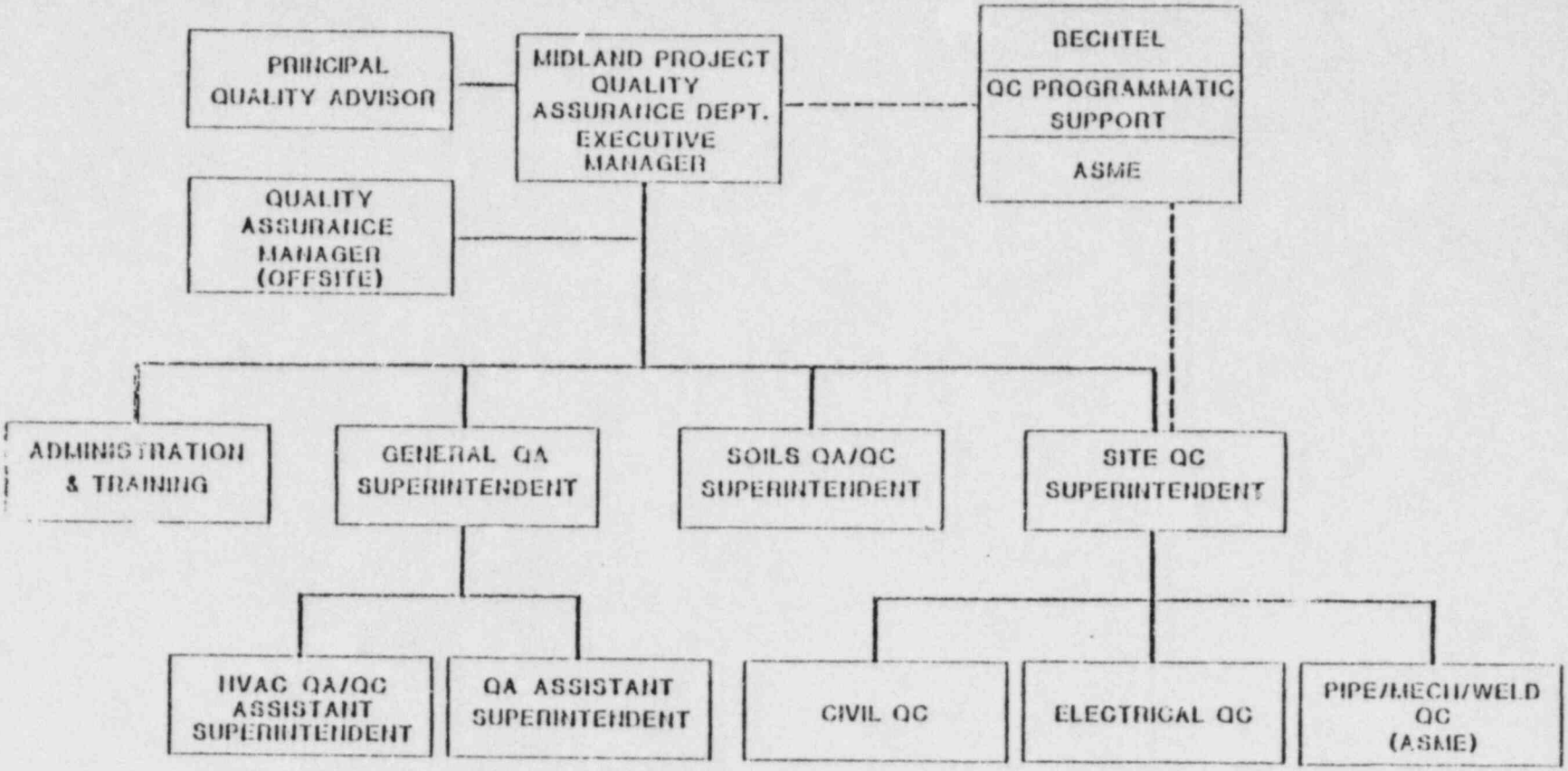
5. If there are unanswered questions at the end of the scheduled class time, an evaluation is made by the instructor as to whether training can nevertheless be considered complete and the examination given without jeopardizing the students opportunity to satisfactorily write the exam.

6. Even if the examination can be given, prior to answering questions, the questions are still tracked and answered prior to certification.

7. When a trainee indicates that he is not prepared to take an examination or a performance demonstration, he shall not be administered the examination or performance demonstration until his specific concerns are resolved.

FIGURE 3-1

MPQAD ORGANIZATION



NOTE: THIS CHART IS INTENDED TO INDICATE ONLY THE INTEGRATION OF THE BECHTEL QC FUNCTION.

MPQA DEPARTMENT STATEMENT OF TRAINING POLICY

FIGURE 3-2

It is the objective of the MPQAD Training Department to provide training that meets the needs of the trainees. To help meet these needs the following policies apply:

1. Personnel who are required to attend classroom training shall not be administered an examination without 100% classroom attendance. 100% attendance is defined as total classroom time less instructor excused absences for brief periods of time. A lesser percentage may be requested in writing by the trainees supervisor and approved by the appropriate Training Supervisor.

2. When trainees have pertinent questions that relate to the training subject matter the instructor shall take action to answer the questions or obtain the answers and provide them to the students prior to final examination or certification as appropriate.

3. The time required for self-study prior to examination shall be determined and scheduled by the appropriate Training Coordinator, based on the duration of the lesson and complexity of the subject.

4. The instructor will review the class evaluation sheets or a composite to determine the acceptability of the training prior to administering the exam to the class. If judged unacceptable, the exam will not be administered until appropriate action has been taken.

5. When a trainee indicates that he is not prepared to take an examination or a performance demonstration he shall not be administered the examination or performance demonstration until his specific concerns are resolved.

STUDENT HANDOUT

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Recertify QC Inspectors

The training and recertification process for QC Inspectors as just discussed satisfies commitments made during the September 29, 1982 public meeting with the NRC. Those inspectors transferred from the Engineer/Constructor to MPQAD are trained and examined in accordance with MPQAD Procedure B-3M-1. Upon satisfactory completion of the training and examination requirements, inspection personnel will be certified for the Project Quality Control Instruction(s) (PQCI(s)) they are to implement. Inspection personnel are certified on a schedule which supports ongoing work and system completion team activities.

Where individual inspectors fail any part of the recertification process an evaluation will be made of the cause of the failure and based on that evaluation, a determination will be made of the need and extent for reinspection of the individual inspector's past work.

3.4 Milestones

Establish New Organization

Transfer the Bechtel QC Organization to MPQAD.	Complete
Submit changes to Topical Reports and quality program manuals to NRC.	Complete

Recertify QC Inspectors

Specify the revised training and examination requirements for certification (B-3M-1)	Complete

4.0 PROGRAM PLANNING

4.1 Introduction

The detailed planning for the major portion of the Construction Completion Program is described in this section.

Planning in support of Phase 1 consists of the activities to set up a team organization, process and procedures to assess the installation and inspection status of Q-systems, Q-components and Q-structures (Section 4.2) and to verify the quality status of hardware installed and inspected prior to December 2, 1983, (Section 4.3).

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The Phase 2 planning effort covers the process and procedures that will be used by the team organization for completion work (Section 4.4). The procedures to integrate the quality program requirements with completion work are covered (Section 4.5).

4.2 Team Organization (Phase 1)

4.2.1 Introduction

The planning for team organization consists of procedures preparation and team organization and training for an installation and inspection status assessment.

4.2.2 Objectives

1. Establish and implement a team organization ready to inspect and assess work for installation and inspection status.

2. Develop the organizational processes and procedures necessary to implement the team approach for status assessment.

3. Provide training to ensure required inspection and installation status assessment activities are satisfactorily performed.

4.2.3 Description

Team Organization

The team organization structure will vary depending upon the assigned scope of work. The assigned scope of work will be made on the basis of systems, specific items such as hangers and commodities that are installed and tracked on an area basis such as conduit, cable tray supports and watertight doors. (For example, see Bechtel Field Procedure FPG9800, "Bulk Hanger Organization Charts".) The organization will

consist of a team supervisor and personnel as appropriate from field engineering, planning, craft supervision, project engineering, MPQAD and Consumers Power Company Site Management Office. The team may be augmented by procurement personnel, subcontract coordinators and turnover coordinators.

Teams are assigned a specific scope of work and held accountable for status assessment and overall completion within this scope. The scope includes the requirements to develop a viable working schedule and insure early identification and resolution of problem areas. Project processes and procedures are being reviewed and modified to incorporate the team organization. The team MPQAD representative is responsible for providing the QA/QC support for the team. He receives scheduling direction from the Team Supervisor but receives all other direction from and reports to management within MPQAD. To support the team, he analyzes the quality requirements and plans the QC activities to integrate them with the team effort. He assures the necessary PQCI's and certified inspection personnel are available for performing the inspections. He assures validation of NCR's. He maintains cognizance of the quality status of the verification activities.

Pilot teams are being utilized to develop and test processes and procedures during the development stage to assure that Program objectives can be met. This also provides practical field input to assure that efficient and workable methods are used.

Team members are physically located together to the extent practicable to improve communication, status assessment, problem identification and problem resolution. The MPQAD representative, however, will continue to report to MPQAD management and will maintain a permanent physical assignment within the MPQAD area.

Team Training

The construction training procedure (FPG-2.000) has been revised to incorporate the training requirements of the CCP. The procedure sets down specific requirements for type of training and subject matter for each organization element. The training requirements by type and subject are defined in a matrix for each organization, management and staff level including craftpersons. The training matrix will be approved by Consumers Power Company.

The team training includes the major elements described below:

1. General training will be provided in

   A. Quality requirements for nuclear work

   B. Requirements of the CCP

   C. Safety orientation

   D. Inspection and work procedures

   Training in Items (A) through (C) and selected parts of (D) will be conducted in a formal setting and will be given to all personnel including the craftpersons.

   In addition, a "tool box" training session will be conducted at least monthly for the craftpersons by the foreman. The subject matter will be developed by the training coordinator, and will include information regarding quality issues across the job.

2. Training in the procedures used to govern the performance of work will be conducted for designated field engineering, support personnel and craft personnel as defined in the training matrices.

   Formal training will be conducted for identified procedures that define the control of designated work processes, procedures for control of special processes and requirements for inspection and acceptance of completed work. Formal training includes classroom or field demonstration/discussion sessions.

Documentation of Nonconformances

Non-conformances on the finished portion of partially completed work identified during the status assessment will be documented on Non-conformance Reports (NCR's).

4.2.4 Milestones

. Complete assignment of team supervisors and members to designated systems.	Complete
. Complete organization description and procedures for team functions.	Complete
. Set up training program for teams.	

4.3 Quality Verification (Phase 1)

4.3.1 Introduction

The verification program is the activity undertaken to establish, using a variety of methods, that the hardware installations completed and inspected prior to December 2, 1982 have an acceptable quality status and that prior inspections were performed in an acceptable manner.

4.3.2 Objectives

The objectives of the verification program are to:

- Develop and implement a verification inspection plan using reviewed/revised PQCI for completed and inspected work which considers:

  a. Re-inspection of accessible items for quality verification.

  b. Verification of acceptability of inaccessible attributes by a review of documentation, over-inspection results and past corrective actions and supplementary to these reviews, if required, by NDE techniques and destructive examination.

4.3.3 Quality Verification Program Description

The Quality Verification Program is provided in Appendix 1 of this document.

The quality verification program is based on a 100% reinspection of accessible attributes and review of documentation for inaccessible attributes. At some future date, once the quality level of completed work has been established, Consumers Power Company will make a determination as to whether or not further verification efforts can appropriately be based on less than a 100% reinspection program.

When Consumers Power Company believes that sufficient justification exists for a reduction in the 100% commitment, it will recommend such a reduction to the NRC in accordance with the statistical sampling plan described in an appendix to the Quality Verificatio Program.

4.3.4 Milestone

- Issue Quality Verification Plan — Complete

4.4 Completion Planning (Phase 2)

4.4.1 Introduction

Establish completion processes, prepare procedures and expand training to cover completion work.

4.4.2 Objective

The objectives of completion planning are as follows:

- Establish processes and interfaces for work completion.
- Prepare procedures defining tasks of each completion team.
- Train team members by expanding upon training received previously for inspection and status assessment.
- Establish scheduling methods to be used during completion activities.

4.4.3 Description

The team organization (developed in Section 4.2) and the processes and procedures will be extended to accomplish the completion work.

Training will be conducted to assure that supervisors understand the team objectives and their role. Emphasis will be placed on completion of all work in accordance with the design and procedural requirements, and the change process to be used when the design or the procedures must be modified.

Completion work will be identified and released for construction using a controlled process to ensure that new work does not cover up existing nonconformances or items that have not been inspected or re-inspected. This process is described in Section 4.5.3 and 4.5.4.

4.4.4 Milestone

- Complete team procedures and training program for initiation of completion work.

4.5 QA/QC Completion Planning (Phase 2)

4.5.1 Introduction

The QA/QC completion activity covers the planning to support completion work.

4.5.2 Objectives

Establish in-process inspection program and complete review and modification of PQCIs.

4.5.3 Description

The QC in-process inspection program will be directly coordinated with construction work plans for new work to insure that inspection points are integrated with the installation schedule. The identification of applicable PQCI's and required inspection points will be used by system completion teams to insure that QC inspections are adequately scheduled into the process. The completion team quality representative will be responsible for providing the interface between the completion team and MPQAD to insure that quality requirements are satisfied.

Procedure for Control and Release of New Work

The process for release of work will be controlled by procedures that ensure that the requirements of the Construction Completion Program are met prior to initiation of new work. The requirements for release of work include; checking, review and approval to ensure that verification and status assessment activities are completed and that the new work activity will not cover up (make inaccessible) items that have existing nonconformances. These procedures are identified in Figure 4-1. They define the overall process for identification and approval prior to release of work. These procedures require an identification of equipment or items that may be affected by the new work package and a check to see that there are no existing nonconformances or incomplete inspections on these items.

The interactions between project management, the completion team and the QA/QC organization are as follows. Prior to Phase 1, quantification of Q items will be performed by the completion team. The completed items will be identified to the QA/QC organization for the association of closed IRs and subsequent verification during Phase 1. The remaining items will be placed in an incomplete category and will be the basis for the status assessment by the completion team during Phase 1. A commodity list will be prepared as the Phase 1 verification and status assessment activities are carried out and will result in a documented status for each system/area.

This documented status will form the basis for site management review prior to release for Phase 2 completion work. Construction work plans (CWPs) for new work will be prepared based on the lists as they are developed.

There are several major steps in the preparation and approval of the CWP. Each CWP will have a comparable Quality Work Plan (QWP) that defines the quality activities. Inspection hold points will be identified and included in the CWP. Following initial preparation of the CWP, the package is taken by the team quality representative. The inspection hold points are reviewed and approved according to MPQAD procedure and a QWP is initiated for this work activity. The QWP contains the inspection records that will be required for that work activity. A review will be performed to ensure existing nonconformances or uninspected work are not covered up. The review will be based on the steps in the three procedures identified in Figure 4-1. After the CWP is returned to construction, and the QWP is prepared, work can proceed.

4.5.4 Special Procedures

As the detailed planning for CCP implementation has developed, it has become apparent that certain activities involving installation of some bulk commodities can be performed most efficiently if performed by a specialized team set up for that specific commodity.

A team organization for status assessment and subsequent installation of pipe hangers has been formed. This team will work under procedures that provide for meeting all conditions imposed on the system team organization. The same procedure for control and release of new work described in Section 4.5.3 will be in effect for this activity. Since the status assessment and verification of all items in an area will not be complete prior to initiating hanger work, the area release contains special provisions to ensure existing non-conformances or uninspected work is not covered up. Essentially, each Construction Work Plan (CWP) will contain a specific review and check that the new work will not effect status assessment or verification for existing installation.

The installation of water tight doors can also be performed outside the system team organization but will be governed by the same procedures for control and release of new work. These procedures will ensure that there is no coverup of existing non-conformances or uninspected work.

It will also be desirable to allow installation of specific items on systems critical to the turnover schedule prior to full release of an area for Phase 2 work. In these limited cases, the procedures identified in Figure 4-1, provide for a full examination in the CWP of each item and identification of items that might be covered up. This information will be used by MPQAD and the team organizations to ensure each item

that might be covered up will be status assessed and/or inspected and completed prior to release of the CWP.

In each of the cases described above, management reviews will be held, third party and NRC release points identified in, Section 5.0 will be adhered to. These activities all meet the requirements identified in Section 10.0 for CCP activities.

4.5.5 Milestone

- Complete procedures for integration of inspection points with construction work process.

- Complete procedures for control and release of new work.

FIGURE 4-1

Procedures for Controlling Release for New Work

Procedure	Organization	Purpose
Area Release for Construction (FIG 7.500)	Construction	These three procedures together ensure proper completion of verification and status assessment activities prior to initiation of new work and ensure no cover-up of existing nonconformances
Construction Work Plans (FPG 7.300)	Construction	
Control, Release and Handling of Construction Work Plans and Quality Work Packages (T-3)	MPQAD	

5.0 PROGRAM IMPLEMENTATION

5.1 Introduction

The implementation of the Phase 1 Construction Completion Program activities will be initiated after management reviews of the overall process insures that Project performance and quality objectives have been addressed. The Phase 1 work will then be carried out by the various teams and inspection personnel in accordance with the procedures described in the preceding sections. The verification and installation and inspection status assessment of an area, system or partial system will be followed by a review of results and a second management review before initiating the Phase 2 completion work. NRC hold points have been placed in the process. These hold points have been established to give the NRC confidence in the effectiveness of the CCP implementation. Third party (Section 7.0) hold points will be determined after the NRC has approved the contractor.

5.2 Objectives

The objectives to be met are:

- Establish the present installation completion and quality status.
- Integrate the construction and quality activities for all remaining work.
- Improve performance in demonstrated conformance to quality goals in all system completion work.
- Establish a management involvement that ensures program committments are properly defined and carried out.
- Provide NRC with confidence in the projects ability to complete the plant.

5.3 Description

The preceding sections have objectives that establish the prerequisites for the implementation of the Construction Completion Program. The Project Management reviews (identified in Figure 1-1) and NRC release are described in this section.

5.3.1 Management Review - Phase 1

Project management will conduct formal reviews of the plans for implementation activities prior to initiation of team activities for the Phase 1 work. Each major activity (systems and area completion, pipe hangers, etc) described in Section 4.0 will be reviewed. These reviews will ensure that identified project management and quality issues have been adequately addressed by specific actions and that Program

objectives are met. The reviews will cover the process for both 1) the verification of completed inspection activity and 2) the installation and inspection status activity.

NRC Hold Point

Upon completion of each Phase 1 management review and resolution of open items, NRC will release the activity to proceed. This process will allow the Project to establish NRC confidence in the project's preparation and ability to proceed.

Phase 1 Implementation

The existing installation and inspection status and verification of completed work will be established in accordance with the plan presented in Section 4.

5.3.2 Evaluation and Management Reviews - Phase 2

The installation and status assessment will be performed on a system and/or area basis. Prior to the start of Phase 2 a review will be held of the CCP activities to date and of the results of the initial verification and status assessment activities. In addition, the plans and procedures for Phase 2 implementation will be reviewed. This evaluation assures management that the project is prepared to release new work. The first management review for work release will be done by the management team. Subsequent status assessment results will be released by site management prior to initiation of additional completion segments. Reports will be made to Project management at regularly scheduled meetings.

NRC Hold Point

NRC will release Phase 2 activities to proceed following completion of the Phase 2 management reviews and releases described above.

Phase 2 Implementation

This activity starts completion for turnover. Work will be scheduled as installation and inspection status assessments are completed and reviewed. Correction of identified problems will be given priority over initiation of new work, as appropriate, and the completion teams will schedule their work based on these priorities.

The plant will be divided into many distinct modules and the CCP sequence will be applied to each module. As a result, there will be situations in the plant where Phase 2 activities will be occurring immediately adjacent to an area undergoing Phase 1 activities.

Third Party Construction Implementation Overview

The Phase 1 management reviews and the initial Phase 2 management review will be audited by the Construction Implementation Overview Third Party as described in Section 7.3.

5.4 Milestones

- Complete Management review and initiate implementation of plan for verification of completed inspections.
- Complete Management review and initiate implementation of plan for status assessment.
- Complete Management review of initial verification and installation and inspection status results and initiate systems completion work.
- Satisfy the NRC hold points.
- Establish third party hold points.

6.0 QUALITY PROGRAM REVIEW

6.1 Introduction

The adequacy and completeness of the quality program is reviewed as part of the ongoing Project management attention to quality. These reviews consider questions raised by NRC inspections or findings raised by third party evaluations.

6.2 Objective

Address issues raised by internal audits, NRC inspections and third party assessments. Program changes, if needed, will be evaluated and, as findings are processed, will be factored into the Project work.

6.3 Description

Consumers Power Company believes Midland QA program is sound. From time to time, questions arise on detailed aspects of the program or program implementation. The normal process of addressing these issues ensures that all necessary information is provided to NRC and that internal confidence in the program is maintained.

The recent inspection of the diesel generator building has raised several issues of programmatic concern. These are in the areas of material traceability, design control process, Q-system related requirements, document control and receipt inspection. Project management has directed that an expeditious evaluation of these issues to be considered as part of the management review prior to initiation of Phase 2. Items identified in the NRC D/G Bldg inspection report are addressed and being resolved through the normal process of closing the inspection findings. Any corrective action or program changes will be implemented as appropriate in Project work on a schedule provided in the inspection report response.

The Project will also receive, from time to time, findings from third party assessments (Section 7). These findings or recommendations may also result in program modification or adjustments. Corrective action taken by the Project will be implemented on a schedule stated in the response to these findings.

7.0 THIRD PARTY REVIEWS

7.1 Introduction

This section describes third party evaluations and reviews that are planned to assess the effectiveness of design and construction activity implementation. Third party reviews being conducted as part of the Remedial Soils Program are not included in this activity.

7.2 Objectives

To assist in improving Project implementation and assessment of Midland design and construction adequacy, consultants will be utilized in order to:

- Provide continuous monitoring and feedback to Management of Project performance.
- Identify any activities or organizational elements needing improvement.
- Improve confidence (including the NRC's and the public's) in overall Project adequacy.

7.3 Description

The use of consultants to overview Project design and construction activities with particular emphasis on construction is part of the effort to improve the Project's implementation of the quality program. Specifically, the plan overview employs the use of consultants for three separate functions: (1) To carry out a self-initiated evaluation (SIE) of the entire Project under the INPO Phase I program, (2) to utilize a third party Construction Implementation Overview (CIO) of ongoing site construction activities to provide monitoring of the degree of implementation success achieved under the new program and (3) to conduct a third party Independent Design Verification (IDV) Program. Only the CIO is described in this section.

Construction Implementation Overview

A third-party Construction Implementation Overview (CIO)is being undertaken using, as a model, the program developed specifically for the underpinning portion of the soils remedial work. The overview was initiated by retaining an independent firm having considerable experience and depth of personnel in the nuclear construction field. The consultant's overview team is located at the Midland Plant site and observe the work activities being conducted in accordance with this Plan. The overview will continue until Consumers Power and the NRC have confidence in the adequacy of the implementation of the Consumers Quality Assurance Program for the Midland Project.

Findings identified by the installation overview team will be made available to the NRC in accordance with established procedures. The protocol for communications between the parties will be the same as used on the soils remedial activities.

In order to ensure the Project's readiness to undertake the major steps in the Construction Completion Program (CCP), the CCP includes provisions for management review at key points in the process. The review will examine plans for future implementation and ensure that programs and processes are thorough, complete and correct. To provide the NRC with additional assurance that the CCP processes have, in fact, been and will be implemented as described, the duties of the third party CIO will include responsibility for audits of Project performance of these management reviews of the CCP process. The CCP implementation will not proceed beyond these points until the third party overviewer has documented their satisfaction with our readiness to proceed, including satisfaction with our initial response to any audit findings, in their weekly reports or other memoranda.

The CIO will also overview site construction activities while in residence, although the significant focus will be on the implementation of the CCP. The exception is that the CIO will not include an overview of the other third party evaluations being conducted.

Consumers Power Company has proposed that Stone and Webster (S&W) be the organization to perform the CIO. This is based on the fact that S&W is considered technically capable to perform the activities both in terms of the individual team proposed and in the corporate depth to support this effort. They are presently conducting an independent overview of the soils remedial activities and have been found acceptable by the NRC for corporate independence.

7.4 Milestones

Construction Implementation Overview

Define scope	Complete
Select consultant	Complete
Mobilize CIO Team	Complete

8.0 SYSTEM LAYUP

8.1 Introduction

Perform system lay-up activities to protect plant equipment.

8.2 Objectives

Expand the protection of completed and partially completed plant systems and components until plant start-up, to take into account any special considerations during the status assessment.

8.3 Description

Procedures and instructions are provided in the Testing Program Manual to protect equipment during the on-going installation and test work. These were extended to cover special considerations associated with the Program implementation. Both the pre- and post-turnover periods are covered. System and component integrity is ensured through existing programs and implementation of control and verification procedures.

In summary, these procedures and instructions require: Test Engineers to complete walkdowns of Q-Systems (in the auxiliary, diesel generator and containment buildings and the service water pump structure), paying particular attention to systems/components that are open to the atmosphere (eg open ended pipes, open tanks, missing spools, disconnected instrument lines, etc). Systems that have been hydrotested but are not currently in controlled layup require action to place the system in layup. Layup consists checking to ensure that system water conditions are within specification followed by moisture removal and closing the system from the atmosphere.

8.4 Milestones

- Complete the layup preparation walkdown — Complete

Normal maintenance : oil + rotate

9.0 CONTINUING WORK ACTIVITIES

9.1 Introduction

This section describes the activities that are proceeding in accordance with previously established commitments during the implementation of the Program.

9.2 Objectives

- Maintain installation and support effort that will alleviate work interference in congested portions of the plant and facilitate completion and protection of equipment on systems turned over to Consumers Power Company.

- Meet previous NRC commitments on activities which do not impede the execution of the Program.

- Provide design support for orderly system completion work and resolution of identified issues

9.3 Description

Those activities that have demonstrated effectiveness in the Quality Program implementation will continue during implementation of the Construction Program.

These are:

1. NSSS Installation of systems and components being carried out by B&W Construction Company.

2. HVAC Installation work being performed by Zack Company. Welding activities currently on hold will be resumed as the identified problems are resolved.

3. Post system turnover work, which is under the direct control of Consumers Power Company, will be released as appropriate using established work authorization procedures.

4. Hanger and cable re-inspections which will proceed according to separately established commitments to NRC.

5. Remedial Soils work which is proceeding as authorized by NRC.

6. Design engineering which will continue for the Midland Plant as will engineering support of other project activites.

Other programs that are not a part of the Construction Completion Program (CCP) will be integrated with the CCP effort as required for overall project coordination and control by Midland Project Site Management Office.

A separate organization of design engineers (presently existing) will carry out spatial systems interaction (SSI) review and examination. Although not part of the CCP, this will be done in coordination with the activities of the CCP. The conduct of the SSI is not a prerequisite to either Phase 1 or Phase 2 of the Construction Completion Program. This program is being overviewed by the CIO as described in Section 7.3. The SSI represents the Project response to the generic licensing issue of "important to safety" and is being handled outside of the CCP with NRC NRR.

9.4 Milestones

These activities are proceeding with schedules that are independent of this Plan.

10.0 CHANGES TO THE CONSTRUCTION COMPLETION PROGRAM

10.1 Introduction

The mechanism for obtaining approval to initiate activities that do not meet the requirements of the CCP is described in this section.

10.2 Objectives

Establish a management control to ensure that any activities that do not meet the requirements of the CCP are reviewed and approved prior to initiation.

10.3 Description

A procedure (MPPM-19) is being issued to control changes to the CCP. The procedure will provide that Q work activity outside the exceptions defined in Section 9.0 will meet the requirements of the CCP. Any changes to the defined CCP process will receive management review and approval for any deviation from the CCP requirements. The requirements that must be maintained for work activities under the CCP are:

A. Management reviews are scheduled and held of (1) activity planning for verification and status assessment and (2) results of status assessment and planning prior to new work activity.

B. A process is in place to ensure that no existing nonconformances will be covered up by new work activities.

C. Procedures to control work definition and release including definition of inspection requirements and inspection hold points are in place.

D. Inspection and construction personnel involved must have received all required training.

Any work activity that does not meet these conditions will be considered a change. A change will be reviewed by the Construction Implementation Overviewer. The NRC Region III management will be informed prior to implementation.

QUALITY VERIFICATION PROGRAM
MIDLAND NUCLEAR COGENERATION PLANT UNITS 1 AND 2

Index of Topics

QUALITY VERIFICATION PROGRAM
MIDLAND NUCLEAR COGENERATION PLANT UNITS 1 AND 2

Index of Topics

QUALITY VERIFICATION PROGRAM

Midland Nuclear Cogeneration Plant Units 1 and 2

1. Purpose: To confirm through a verification program under the direction of Consumers Power Company, the acceptable quality status of safety related procurement and construction activities completed and inspected by the Engineer-Constructor quality control personnel prior to December 2, 1981.

2. Scope: This program will cover all closed Inspection Records of inspections performed by the Engineer-Constructor quality control personnel on safety related material, systems, components and structures of the Midland Nuclear Cogeneration Plant Units 1 and 2 prior to December 2, 1981, except:

2.1 Remedial Soils Work, which has been under the direction of Consumers Power Company Quality Assurance (QA) personnel since August, 1981.

2.2 HVAC work, which has been under the direction of Consumers Power Company QA personnel since the major reorganization in June 1981.

2.3 Verification of cable routing, identification and other accessible attributes which is being done on a 100% reinspection basis in accordance with PQCI E-1.6.

2.4 Verification of ASME hangers which will be done under a separate reinspection program as previously committed to the NRC on November 13, 1981 and March 29, 1982. This program requires 100% reinspection of all hangers with closed IR's as of December 1982. This program will be conducted under the direction of Consumers Power Company QA personnel.

2.5 B&W Construction Company activities which have been performed under the B&W Quality Assurance Program.

3. References:

3.1 Regulatory Guide 1.58, Rev 1, Qualification of Nuclear Power Inspection, Examination and Testing Personnel.

3.2 MPQAD Procedure 2-2M, Preparation and Approval of Project Quality Control Instructions

4. Definitions:

Attachment 10 — A form previously utilized to document Walkdown status on specified piping systems prior to Hydrostatic or Pneumatic Testing.

Discrepancy Report (DR):	A form similar to the IPIN previously used to report inprocess nonconformances.
Inaccessible:	An item or attribute of an item which, due to its physical location or configuration, cannot be physically or visually reinspected without removing and thereby invalidating installed work. Under the Quality Verification Program, this includes those items or attributes normally inspected in process and which subsequent construction processing makes inaccessible, eg, piping fit-up, root weld and subsequent layers under the cover pass, anchor bolt hole drilling, internal cleanliness, embedment in concrete, etc. Inaccessible does not include those items which can reasonably be reached by scaffold erection, limited access (remote) areas which require the physical size of the inspection personnel to be limited or those items that can be viewed by removal of access cover or panels, eg, electrical cabinets, conduit boxes, etc.

The inaccessibility of attributes covered by insulation or coatings will be handled on a case by case basis. When such coverings can be practically removed and replaced and where their particular reinspection is required to establish an acceptable level of confidence of the quality of a particular attribute, the coverings will be removed. Items which fall into this category and are scheduled for verification in accordance with plan requirements will not be considered inaccessible unless so approved on a case by case basis by the Executive Manager - IEQAD.

In Process Inspection Notice (IPIN): A form previously used to record nonconforming conditions or work returned to construction forces for rework prior to completion of inspection activities for the item in question.

Inspection by attributes: Inspection whereby the item or attribute is classified simply as conforming or nonconforming without regard to the degree of nonconformance.

Inspection Record (IR):	A report that scopes the inspection to be performed, relating it to a specific PQCI and a system, component, structure or portion thereof and which records the results of inspections.
Nonconformance:	A deficiency in characteristic, documentation or procedure which renders the quality of an item unacceptable or indeterminate.
Nonconformance Report (NCR):	A document used for reporting nonconforming conditions.
Population:	The entire quantity of closed Inspection Records (IR) as of December 2, 1982 relating to a specific PQCI.
Project Quality Control Instruction (PQCI):	The document that provides Quality Control Engineers (QCEs) with specific direction as to attributes to be verified, how they are to be verified and the acceptance criteria.

Reinspection: As used in this Verification Program, reinspection means a complete review of requisite documentation and a physical or visual recheck of accessible inspection attributes covered by a specific TQCI or a review of applicable inspection records and related quality documentation where attributes are not accessible.

Verification: As used in this program, verification refers to the overall process of establishing the quality acceptance of the total population of completed and inspected work through combinations, as applicable, of efforts such as re-inspection, documentation review, review of past efforts to investigate and resolve problems, analysis of past overinspection results and, if necessary, NDI techniques and destructive examination.

5. Program Content: As identified in Section 2, Scope, Consumers Power Company (CPCo) will conduct a Quality Verification Program of safety related procurement and construction work in which the prior 100% inspections have been performed under the direct supervision of the Engineer-Constructor. Such inspections were performed in accordance with approximately 100 PQCIs, as listed in Appendix A, that specified the inspection requirements to be achieved by Quality Control (QC) Personnel. As noted in section 5.1, this listing includes all inspections completed by the Engineer-Constructor prior to December 2, 1982, including those excluded from this program for reasons stated herein. The Quality Verification Program has the purpose of establishing a quality baseline for the completion of construction of the Midland Project.

5.1 Detailed Scope: The program will include approximately 100,900 IRs subject to the Quality Verification Program, for which the Engineer-Constructor has a record of completed inspections as documented by closed Inspection Records (IR) and for which no other 100% verification activity has taken place or is scheduled to take place. There are approximately 147,500 closed IRs of which approximately 14,700 were for reinspections which occurred due to design change, construction rework, etc., and approximately 31,900 which are excluded, due to previous commitments under the Remedial Soil, HVAC, Cable routing and identification and ASME hanger programs. Where a reinspection has occurred on a specific item or

attribute the verification will relate to the latest IR. In addition, prior to the use of PQCIs, Material Receipt Inspections (MRI), Field Inspection Plans (FIP) and Welding Inspection WI-5 forms were used as quality instructions and records. These also will be used for quality verification. Where applicable, the results of the inspections will be grouped with like PQCIs. Otherwise they will be treated as separate populations.

5.2 Methodology: This program will confirm the acceptable quality status of completed work and establish the validity of prior inspections. To accomplish this, accessible attributes of items covered by completed IRs will be reinspected to the lastest design requirements with PQCI's which have been reviewed and/or revised as necessary to assure clarity of acceptance criteria and uniformity of implementation. For inaccessible attributes, the original inspection documents will be reviewed for evidence of acceptability, and justification will be developed as described in section 6.3 to establish hardware quality and support the validity of inspections associated with such PQCIs. Each IR relates to a specific PQCI. PQCIs are organized by discipline and further structured to activities within that discipline, e.g., there are separate PQCIs and corresponding IRs for preplacement, placement and post-placement inspections of concrete. Closed IRs related to each PQCI provide a population of like activities. Closed IRs are those where the Engineer-Constructors QC inspection of construction and installed hardware has been completed.

To assess the validity of these past completed inspections, and verify the hardware quality, CPCo will initiate a 100% reinspection of the population to provide adequate confidence that safety related systems components and structures will perform satisfactorily in service.

The initial 100% reinspection effort will be based on a systems/area orientation to provide a quality baseline for subsequent construction completion activities. System/area reinspections will be supplemented by random plant-wide inspections as appropriate to establish a valid quality baseline on an expeditious basis.

At some future date, once the quality level of completed work has been established, CPCo will make a determination as to whether or not further verification efforts can appropriately be based on less than a 100% reinspection program.

When CPCo believes that sufficient justification exists for a reduction in the 100% commitment, it will recommend such a reduction to the NRC in accordance with the statistical sampling plan attached as Appendix C.

5.3 Identification of Deficiencies: Any nonconforming condition observed during the implementation of this program other than those previously identified on nonconformance reports, will be documented

by a nonconformance report and will be dispositioned in accordance with established procedures.

5.3.1 Deficiencies Found During Reinspection of Accessible Attributes: Reinspections will be conducted in accordance with PQCIs which have been reviewed and/or revised since implementation of the Construction Completion Program (CCP) and in accordance with current design drawings and specifications. An acceptable reinspection will validate both the hardware quality and the prior IR. Any deficiencies, other than those previously identified on nonconformance reports as a result of prior inspections, will be identified on a nonconformance report which will be traceable to both the verification and original IR and the item or attribute in question. When a nonconformance documents a difference between the as built condition of the unit and the referenced design drawing or specification, a further check will be made to determine the design basis against which the IR was originally completed, as well as the current stage of construction, to further establish the validity of the original IR.

5.3.2 Deficiencies Found During Reinspection of Documentation for Inaccessible Attributes: The verification process for inaccessible attributes is discussed in Section 6.5. As

noted in that section, any documentation deficiencies will be recorded on the new IR, entered on a nonconformance report and cross referenced to the original IR.

6. Special Program Elements

6.1 Cable Reinspection: As noted in Section 1, Scope, reinspection of routing and identification of installed cables is underway and is being performed 100% for all accessible attributes per PQCI E-4.0. Other electrical work, including cable tensioning and terminations, on which inspections have been completed by the Engineer Constructor will be handled in accordance with this program. This includes PQCIs E-1.0, E-1.1, E-1.60, E-2.0, E-2.1, E-3.1, E-5.0, E-6.0, E-6.2, E-6.4 and E-6.4.1. These PQCIs are further defined and affected quantities of IRs are shown in Appendix A.

6.2 IPIN and DR: In accordance with approved procedures the QC inspection process has used in the past In Process Inspection Notices (IPIN) and Discrepancy Reports (DR) rather than Nonconformance Reports (NCR) to record nonconforming conditions noted by the inspector on work returned to construction for rework. The process required that IPINs be dispositioned before the Inspection Record could be closed. Because the use of IPINs and DRs raises the possibility that a complete inspection may not have been performed on items or attributes covered by IRs with associated IPINs or DRs,

all such IRs will be treated as a unique population and will be reinspected 100%. IPINs are no longer used in the inspection process. Discrepancy Reports (DR) were used prior to the use of the IPINs. They are no longer in use, but are recorded and will be treated the same as the IPIN.

6.2.1 Attachment 10 Forms: Attachment 10's were used in conjunction with hydrostatic/Pneumatic Test Procedures as a punchlist for a defined Hydrostatic or Pneumatic Test, and included line numbers, drawing numbers and test boundaries. The Attachment 10 was not intended to be the quality document that identified documented acceptance by the QCE of subsequent action taken to correct punchlist deficiencies identified during the walkdown process. These deficiencies were intended to be tracked on other quality documents, such as Nonconformance Reports, Inspection Reports, etc. In order to verify that this use of the Attachment 10 did not compromise the quality of installed hardware, all completed hardware inspections documented on closed IRs falling within the system boundaries identified on existing Attachment 10 forms will be 100% verified during the Quality Verification Program.

6.3 Exceptions to this Program: Exceptions to this Program shall not be taken unless such exceptions can be fully justified. One such example would be a case where objective evidence is available of a CPCo overinspection of the the Engineer-Constructor's inspections and which demonstrates effective quality control and provides the basis to verify acceptability of the items or attributes covered by these past IRs.

Where such exceptions are proposed to be taken, a special report will be prepared by the MPQAD-QA General Superintendent for review and approval of the Executive Manager-MPQAD. This report will contain full justification for the exception and documentation of objective evidence to support the exception. The Executive Manager-MPQAD will inform the NRC Region III whenever he has made a decision to allow such an exception to the Program prior to implementing the exception.

6.4 Purchased Material: Purchased safety related material and components whether source inspected or inspected upon receipt are subject to this Program for verification of completed receipt inspections performed by the Engineer-Constructor prior to December 2, 1981. In many cases, purchased items have been installed and are not fully accessible for reinspection; however inaccessible interfaces will have been demonstrated and their functional acceptability proven through installation and subsequent testing. Accessible features will be reinspected in accordance with this Program.

The total number of IRs associated with PQCI R-1.00, Material Receiving Inspection, is approximately 12,000. In addition, prior to the introduction of PQCI R-1.00, approximately 150 MRIs and 20 FIPs were used for receipt inspection, covering approximately 700 items. Based upon further review, receipt inspections covered by MRIs will either be grouped with like items covered by PQCI R-1.00 or be reinspected separately. FIPs were also used for construction activities and will be treated separately under this plan. Where materials such as rebar, certain structural members or features of components are inaccessible for reinspection, documentation will be reviewed in accordance with this Program.

6.5 Inaccessible Attributes: There are 57 PQCIs which cover activities that are deemed to be inaccessible for reinspection. These include rebar installed in placed concrete, containment building tendon reinspection, and PQCIs relating to surveillance of subcontractor activities. A complete listing of these is given in Appendix D to this Program. A brief statement as to why attributes of these IRs are considered inaccessible and why verification by documentation review is appropriate appears in Appendix D. Documentation relating to these PQCIs will be reviewed as indicated in this Program, in accordance with a revised PQCI or checklist specifically developed for review of documentation. These PQCIs, either individually or by groups, will be reviewed and specific detailed [illegible] will be developed to verify the quality

status of associated hardware. This will be done by a combination of methods, applied as necessary to achieve verification, including validation of prior inspections through documentation review, reinspections of attributes that may still be accessible, a review of past overinspections, a review of past activities to resolve problems, and if required, application of NDE techniques or limited destructive examinations. This justification, or recommendations for additional verification activities, where this justification cannot be established, will be provided by the MPQAD-QA General Superintendent to the Executive Manager-MPQAD for decision and approval. Deficiencies in documentation will be reported on nonconformance reports, the disposition of which will determine further actions necessary. These actions will include special testing programs as required to satisfactorily establish the quality acceptance of this category of PQCIs.

7. Documentation and Reports:

7.1 Documentation of Results: Results of reinspections and document reviews will be recorded on new IRs opened specifically for this purpose. Each such new IR will be cross-referenced to the closed original IR. A proper notation will be made on the new IR to identify whether the existing original inspection covered by the IR was validated, rejected or is indeterminate. The new IR will provide the basis to document the quality status of the items or attributes being reinspected.

7.2 Documentation of Nonconformances: Nonconformant conditions observed during reinspection activities will be documented on a nonconformance report and appropriately analyzed for management attention. This includes instances where a design or construction modification has occurred since the Inspection Record was closed and a new IR not yet opened. (Note discussion in Section 5.3 .)

7.2.1 Trending: Deficiencies noted during the verification process will be trended as appropriate for analysis and management information.

7.3 Reports:

7.3.1 Reports to Executive Manager-MPQAD: A weekly status report will be made jointly by the CPCo BOP Quality Control (QC) Superintendent and Quality Assurance (QA) General Superintendent to the Executive Manager - Midland Project Quality Assurance Department (MPQAD) summarizing the results of the program. The report will note the completed Inspection Reports by the unique PQCI number, Nonconformance Reports issued and identification of attribute(s) creating the nonconformance(s).

7.3.2 Reports from Executive Manager-MPQAD: The Executive Manager-MPQAD will inform the CPCo Site Manager, the Engineer-Constructor Project Manager, and the Vice President, Projects, Engineering and Construction, of the status of the quality verification program on a biweekly basis and will provide them with a formal monthly report of the verification effort. As appropriate, he will also report on the acceptability of completed work as it may be impacted by nonconformances.

7.3.3 Reports to NRC and Construction Implementation Overview Team: The Executive Manager-MPQAD will provide copies of the monthly reports noted in section 7.3.2 to NRC Region III and the Construction Implementation Overview Team.

8. Implementation: This program will be implemented under the direct control of MPQAD through procedures approved and issued according to normal programmatic requirements.

8.1 Organizational Responsibilities: The Executive Manager-MPQAD has total overall responsibility and authority for the development and implementation of all quality related aspects of this verification program. He will be responsible for seeing that the implementation phase of the program is coordinated with other project departments as required to assure proper support for this plan commensurate with overall project goals.

8.1.1 MPQAD - BOP QA: is responsible for the programmatic elements of the verification program including, but not limited to, procedure development, PQCI review and approval, nonconformance review, analysis of results, justification for document review, verification of inaccessible attributes, program content modifications and certifying that the verification has been completed for a given area or system, and performing management overview of the reinspection process with appropriate documentation of results.

8.1.2 MPQAD - BOP QC: is responsible for program implementation including, but not limited to, conducting the reinspection activities with QC personnel that satisfy Regulatory Guide 1.58, Rev 1, which requires personnel certification in accordance with ANSI N-45.2.6 (no person will reinspect activities for which he performed the original inspection), reporting results to the Executive Manager-MPQAD, reporting nonconformances to MPQAD-BOP QA, and coordinating with Construction Services and Consumers Site Management Office to establish schedule priorities for reinspection activities.

8.1.3 MPQAD - Site Audit Section: is responsible for formal audits of the overall verification program implementation.

8.1.4 WQAD - QA Administration and Training: WQAD Procedures will be developed in accordance with programmatic requirements to direct implementation of this plan.

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-1.07	Compacted Backfill	181			Hardware & documentation under remedial soils program
C-1.09	Inspection of Crack for EAST Foundation Ring Wall	5			Hardware & documentation under remedial soils program
C-1.10	Insp of Grouting and Dry Packing	1833	±	±	Surface condition and documentation
C-1.11	Drilling & Grouting Rebar	66	±	x	
C-1.20	Concrete Preplacement Inspection	767	±	±	Inspection of remaining unplaced concrete areas plus past documentation
C-1.21	Inspection of Reinforcing Steel	259	±	±	Inspection of accessible rebar plus past documentation
C-1.22	Inspection of Reinforcing Steel at Construction Joints	19	±	±	Inspection of accessible rebar at remaining joints plus past documentation

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not acessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-1.30	Concrete Placement Inspection	780	±	x	
C-1.31	Inspection of Concrete Activities	246	±	x	
C-1.40	Concrete Post Placement Inspection	1002	±	±	Inspection of concrete surfaces plus documentation
C-1.50	Installation and Testing of Expansion Anchors	4982	±	±	Inspection for proper installed condition
C-1.51	Retest Verification of Drop In Expansion Anchors	54	±	x	
C-1.52	Reinspection of Seismic Category I Pipe Support Expansion Anchors	294	±	x	
C-1.53	Reinspection of Expansion Anchors for Seismic Cat-I Support	0			

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not acessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-1.56	Reinspection of Rock Bolt Installation	20	±	x	
C-1.60	Concrete Drilling and Cutting Reinforcing Steel	325	±	x	
C-1.70	Installation of Pressured Concrete Pipe	?	±	x	
C-1.80	Installation of Concrete Unit Masonry	102	±	x	
C-1.81	Installation of Concrete Unit Masonry	139	±	x	
C-1.90	Installation of SWI Sluice Gates	0			
C-2.80	Plant Area Dewatering	59			Hardware and documentation under remedial soils program

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-2.02	Permanent Gravel Packed Wells	17			Hardware and documentation under remedial soils program
C-2.03	Drawdown Recharge Test	1			One time test under remedial soils program
C-2.05	Drilling Q-Listed Areas for Underpinning Operations	14			Remedial Soils Program
C-2.10	Structural Steel Erection	121	±	±	Inspection of accessible attributes plus documentation
C-2.11	Installation of Watertight and Airtight Doors	0			
C-2.20	Field Fabrication of Miscellaneous Steel	1502	±	x	
C-2.21	Field and Offsite Fabrication of Reinforcing Steel	0			

KEY:
* Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL FQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

FQCI #	FQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-2.50	Lead Monitoring of the Feedwater/Isolation Valve Pit Rod & Rock Bolt	0			Remedial Soils Program
C-3.01	Installation Inspection of Spent Fuel Storage Racks	20	±	±	Inspection of accessible attributes plus documentation
C-3.02	Installation Inspection of Spent Fuel Storage Racks	8	±	±	Inspection of accessible attributes plus documentation
C-3.03	Inspection of Test for Acceptability of the Spent Fuel Rack Cells	0			
C-4.10	Batch Plant Inspection	929	±	x	
C-5.10	Shear Connector Installation	503	±	x	
C-6.00	Mechanical Splicing of Reinforcing Bars	787	±	x	

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-7.00	Erection of Reactor Building Liner Plate	10	±	x	
C-8.50	Inspection of Surface Preparation Application Touch Up & Repair of Coating	908	±	x	
C-8.51	Inspection of Decontamination Coat for Concrete	17	±	!	Inspection of surface coadition plus documentation
C-8.60	Inspection of Surface Preparation Application Touchup & Repair of Coatings Reactor Bldg Liner Plate	0			
C-9.00	Installation-Post Tensioning Components	40	±	x	
C-9.10	Post Tensioning System Stressing	309	±	x	

KEY:
± Document-Review documentation for completeness
! Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL FOCI'S WITH QUANTITY AND REINSPECTION INFORMATION

FOCI #	FOCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-9.20	Containment Bldg Tension Reinsp	11	±	x	
CW-1.00	Welding & NDE of "Q" Listed Non ASME Items	381	±	±	Inspection of surface condition and radiographs plus documentation
E-1.0	Installation of Conduit Boxes and Supports	4716	±	±	Inspection of accessible attributes plus documentation
E-1.1	Installation of Boxes	9	±	±	Inspection of accessible attributes plus documentation
E-1.60	In Process Inspection of Electrical Item Installation	85	±	x	
E-2.0	Installation of Cable Tray and Wireway	1368	±	±	Inspection of accessible attributes plus documentation
E-2.1	Installation of Tray Supports	799	±	±	Inspection of accessible attributes plus documentation

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
E-3.0	Final Electrical Area Completion Activity	0			
E-3.1	Electrical System Turnover Activities	108	±	x	
E-4.0	Installation of Electric Cables	7954	±	x	Inspection of accessible attributes has been accomplished under cable routing & ID program
E-5.0	Cable Terminations	12361	±	±	Inspection of accessible attributes plus documentation
E-6.0	Installation of Electric Equipment and Instrumentation	346	±	±	Inspection of accessible attributes plus documentation
E-6.1	Modification of Electric Equipment	209	±	±	Combine with RW 1.10 Inspect accessible attributes plus documentation

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
E-6.2	Installation of Terminal Boxes	108	±	±	Inspect accessible attributes plus documentation
E-6.6	Installation of Electric Penetrations	127	±	±	Inspect accessible attributes plus documentation
E-6.6.1	Installation of Feed Through Assy's for Elec Penetration	388	±	±	Inspect accessible attributes plus documentation
E-6.7.1	Installation of Batteries & Racks	9	±	±	Inspect accessible attributes plus documentation
EM-1.10	Modification to Electrical Equipment	144	±	±	Combine with E-6.1 Inspection of accessible attributes plus documentation
I-1.10	Installation of Instruments	159	±	±	Inspection of accessible attributes plus documentation
M-1.00	Installation of Mechanical Equipment	11	±	±	Inspection of accessible attributes plus documentation

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
M-2.00	Installation of Rotating Equipment	28	±	±	Inspection of accessible attributes plus documentation
M-3.10	Installation of Cranes	1	±	±	Inspection of accessible attributes plus documentation
M-4.00	Complete Installations of Mechanical Equipment	2	±	±	Inspection of accessible attributes plus documentation
MP-1.00	Disassembly Reassembly and Modification of Systems and Components	4	±	±	Inspection of accessible attributes plus documentation
MRI-1.00 Rev 1	Welding and NDE of Mechanical Equipment	0			
P-1.00	Piping Completed Line Installation	80	±	±	Inspection of accessible attributes plus documentation
P-1.10	Piping Subassembly Field Installation BW	1858	±	±	Inspection of accessible attributes plus documentation

KEY:
± Document-Review documentation for completeness
* Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL FQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

FQCI #	FQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
P-1.20	Piping Subassembly Shop Fab & Rework	294	±	±	Inspection of accessible attributes plus documentation
P-1.30	Valve and Inline Component Install	1747	±	±	Inspection of accessible attributes plus documentation
P-1.60	In Process Insp Fab/Installation Rework of Piping	167	±	x	
P-2.00	Pipe Component Supports Final Setting	5	±	±	Inspection of accessible attributes plus documentation
P-2.10	Pipe (Component) Support Installation	7657			
P-2.20	Pipe (Component) Supports Fabrication	6460	±	±	Inspection of accessible attributes plus documentation
P-2.30	Pipe (Component) Support PH9/PH9 Walkdown	6			Closed IR's from P-2.10 and P-2.20 will be reinspected to requirements of P-2.30 where installed

KEY:
± Document-Review documentation for completeness
± Hardware-To inspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
PF-1.10	Pipe Flange Installation and Rework	820	±	±	Inspection of accessible attributes plus documentation
PI-1.40	Field Fabrication and Installation of Piping Related Instrumentation	204	±	±	Inspection of accessible attributes plus documentation
PI-2.40	Off-Site Fabrication/ Weld of Pipe Related Instrument Supports	84	±	±	Inspection of accessible attributes plus documentation
PIW-1.00	Welding and NDE of Instrument Tubing and Fittings	642	±	±	Inspection of accessible attributes plus documentation
PW-1.00	Fab/Weld/Heat Treat and NDE of ASME III Piping	11014	±	±	Inspection of accessible attributes plus documentation
R-1.00	Material Receiving Inspection	12007	±	±	Inspection of accessible attributes plus documentation

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL FQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

FQCI #	FQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
R-1.60	Receiving Area and Storage Facilities Inspection	45	±	x	Walk through of existing conditions plus documentation
R-2.00	Receiving Inspection for HSSS Equipment	198	±	x	
R-2.10	Receiving Inspection for HSSS Equipment	42	±	x	
R-2.20	Receiving Inspection for HSSS Equipment Documentation	217	±	x	
S-1.00	Storage Area/ Facilities Surv	67	±	x	Walk through of existing conditions plus review of documentation
SC-1.05	Material Testing Services	306	±	x	

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
SC-1.06	Recoating Work of Cont Bldg Liner Plate, Misc Steel, and Pipe Hanger Attachment	0			
SC-1.07	Agreement for Tech Services for Soils Laboratory Testing	0			
SC-1.10	Earthwork Subcontract Surveillance	0			
SC-1.11	Concrete and Unit Masonry Surface Sub/ Contract Surv	406	±	x	
SC-1.14	Subcontract Surveillance of Installation of Underpinning	0			
SC-1.16	Field Erected Storage Tanks/Subcontract Surveillance	108	±	x	

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
SC-8.00	Subcontractor Surv of Installation of Soil and Crack Monitoring Devices	58			Remedial Soils Program
SE-1.00	Measuring and Testing Equipment Laboratory Surveillance Inspection	31	*	x	
SH-1.03	Heat, Ventilation and Air Conditioning Subcontract Surveillance	828	*	x	
SH-1.04	Field Erected Component Cooling Water Surge Tanks Subcontracts Surveillance	108	*	x	
SH-1.17	Field Fabricated Incore Installation Tanks Subcontract Surveillance	183	*	x	
SM-1.01	MDE-Subcontractor Surveillance	120	*	x	

KEY:
* Document-Review documentation for completeness
* Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
T-1.00	Hydrostatic and Pneumatic Leak Testing	460	±	±	
T-1.10	Final Cleaning of Interior Surfaces of Piping, Mech Equipment and Instrumentation	0			
T-5.00	Lift Test for Cranes	0			
W-1.00	Welding, Heat Treatment and Non Destructive Examination	20251	±	±	Inspection of accessible attributes, radiography plus documentation
W-1.60	Area Inspection Of In Process Activities For Welding Q-Listed And ASME III Items	164	±	±	
C-1.01	Excavation in Q-Soil Area	NA			Remedial Soils Program

KEY:
± Document-Review documentation for completeness
± Hardware-Reinspect accessible attributes
± Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PQCI #	PQCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
C-7.01	Gravel Packed Wells	224			Documentation and hardware is under remedial soils program
C-7.22	Field Fabrication Of Reinforcing Steel	0			
C-1.05	Inspection Of The Feedwater Isolation Valve Pit Jacking Operation	NA			Remedial Soils program
EB-1.0	Installation Of Conduit & Box For Under Pinning Data Aquisitions System	61			Documentation and hardware is under remedial soils program
EB-4.0	Installation Of Electrical Cables For Under Pinning Data Aquisition System	117			Documentation and Hardware is under remedial soils program
EB-5.0	Cable Termination For Under Pinning Data Aquisition System	173			Documentation and Hardware is under remedial soils program

KEY:
* Document-Review documentation for completeness
* Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PSCI'S WITH QUANTITY AND REINSPECTION INFORMATION

PSCI #	PSCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
EH-6.0	Installation Of Instruments For Under Timing Data Aquisitions System	25			Documentation and Hardware is under remedial soils program
EH-6.1	Installation Of Instrument Supports For Under Timing Data Aquisitions System	29			Documentation and Hardware is under remedial soils program
IC-1.0	Instrument Checkout	67			Documentation and Hardware is under remedial soils program
EH-1.00	Storage & Maintenance Of Material Released To Bergentine	NA			Remedial soils program
ES-1.00	Storage & Maintenance Of Material Released To Spencer, White & Prentis	NA			Remedial soils program

KEY:
1 Document-Review documentation for completeness
2 Hardware-Reinspect accessible attributes
3 Hardware-Attributes not accessible for reinspection

A LIST OF ALL POCI'S WITH QUANTITY AND REINSPECTION INFORMATION

POCI #	POCI TITLE	QUANTITY	DOC'T	HARDWARE	REMARKS
SGR-1.0	Crack Monitoring Of The Feedwater Isolation Valve Pits Sub-Contract Surveillance	36			Documentation and Hardware is under remedial soils program
SB-1.0	Monitoring, Reducing and Reporting Under Pinning Instrument Data Sub-Contracts Surveillance	189			Documentation and Hardware is under remedial soils program
BP C-1.004	Welding And NDE Of "U" Material	8			Documentation and Hardware is under remedial soils program
BP C-1.008	Excavation And Lagging Of Access Pits Piers and Drifts For BP	1			Documentation and Hardware is under remedial soils program
BP C-1.010	Field Fabrication Of Steel Sets For Under Pinning Of Aux Bldg & FHP	5			Documentation and Hardware is under remedial soils program

KEY:
1 Document-Review documentation for completeness
1 Hardware-Reinspect accessible attributes
x Hardware-Attributes not accessible for reinspection

A LIST OF ALL PQCI'S WITH QUANTITY AND REINSPECTION INFORMATION

The Remedial Soils Program has initiated the following additional PQCI's for which there are no Engineer-Constructor IR's. Inspections have all been conducted by CFCo supervision

BP-C-1.002	BP-C-1.011	BP-C-1.019	SD-2.0
BP-C-1.003	BP-C-1.012	BP-C-2.003	
BP-C-1.005	BP-C-1.013	BP-C-2.004	
BP-C-1.006	BP-C-1.014	BP-C-2.005	
BP-C-1.007	BP-C-1.015	BP-C-2.007	
BP-C-1.009	BP-C-1.016	BP-C-2.008	
BP-C-1.011	BP-C-1.017	BP-C-2.009	
BP-C-1.019	BP-C-1.018	BP-C-2.010	
BP-C-1.020		BP-C-2.019	
BP-C-1.021		BP-C-2.042	
		BP-C-2.150	
		BP-C-3.001	
		EM/ES-1.00	

APPENDIX B

PQCIs To Be Verified by Review of Documentation Only

The following PQCIs are deemed inaccessible for attribute reinspection. Hardware acceptability will be established by documentation validation where possible and by supplemental verification efforts where documentation review alone does not establish hardware acceptability:

1. Remedial Soils Program

C-1.02 - Compacted Backfill

C-1.09 - Inspection of Crack for BWST Foundation Ring Wall

C-2.00 - Plant Area Dewatering

C-2.01 - Gravel Packed Wells

C-2.02 - Permanent Gravel Packed Wells

C-2.05 - Drilling in Q-Listed Areas for Underpinning Operations

EU-1.0 - Installation Of Conduit and Boxes For UP Data Acquisition System

EU-4.0 - Installation Of Electrical Cables for UP Data Acquisition System

EU-5.0 - Cable Termination for UP Data Acquisition System

EU-6.0 - Installation Of Instruments For UP Data Acquisition System

EU-6.1 - Installation Of Instrument Supports For UP Data Acquisition System

IC-1.0 - Instrument Checkout For UP Data Acquisition

SCM-1.0 - Crack Monitoring Of FW Iso Valve Pits Subcontractor Surveillance

SD-1.0 - Monitoring, Reducing and Reporting UP Inst. Data Subcontractor Surveillance

UP-C-1.004 - Welding And NDE of Q-Material

UP-C-1.008 - Excavation & Lagging of Access Pits, Piers and Drifts For UP

UP-C-1.010 - Field Fabrication Of Steel Sets for UP Of Aux. Building and FIVP.

The above PQCIs relate to the remedial soils program which has been established as a separate project and for which inspections have been performed under the direction of MPQAD since August 1980. Soils work and related documentation have been reviewed by MPQAD for acceptability and corrective measures instituted where required.

2. Reinspection of Expansion Anchors and Rock Bolt Installation.

C-1.51 - Retest Verification of Drop In Expansion Anchors

C-1.52 - Reinspection of Seismic Category I Pipe Support Expansion Anchors.

C-1.56 - Reinspection of Rock Bolt Installation

The above PQCIs relate to reinspections which have been completed and results reported to the NRC.

3. In-Process Activities.

E-3.1 - Electrical System Turnover Activities

E-1.60 - In Process Inspection of Electric Item Installation

R-1.60 - Receiving Area and Storage Facilities Inspection

W-1.60 - Area Inspection Of In Process Activities For Welding Q-listed and ASME III Items

S-1.00 - Storage Area/Facilities Surveillance

P-1.60 - In Process Inspection of Fabrication/Installation Rework of Piping

The above PQCIs relate to in-process activities where affected work would now be completed and any reinspection would be of completed work covered by other PQCIs, e.g., PQCIs E-6.0, W-1.00 and PW-1.00. In the cases of R-1.60 and S-1.00, these are an inspection or surveillance of general facilities maintenance which can be repeated, but not on a basis which would have any meaning relative to conditions existing when the inspections were made. In short, a single inspection can attest to conditions existing today without relation to past conditions.

4. Surveillance of Subcontractor Activities.

SC-1.05 - Material Testing Services

SC-1.11 - Concrete and Unit Masonry Surface Subcontract Surveillance

SC-1.16 - Field Erected Storage Tanks Subcontractor Surveillance

SC-8.00.- Subcontractor Surveillance of Installation of Soil and Crack Monitoring Devices

SE-1.00 - Measuring and Testing Equipment Laboratory Surveillance Inspection

SM-1.03 - HVAC Subcontract Surveillance

SM-1.04 - Field Erected Component Cooling Water Tank Subcontractor Surveillance

SM-1.01 - NDE Subcontractor Surveillance

SM-1.17 - Field Fabricated Incore Installation Tank Subcontractor Surveillance

The above PQCIs all relate to surveillance of subcontractor activities. Where work has not been completed, such surveillance activities can be repeated when safety related work resumes. Otherwise, they can be evaluated only by a review of documentation and a single walk down of affected areas for assessment of current inplace conditions, but not of past activities. In addition, SM-1.03 - HVAC Subcontractor Surveillance, relates to activities outside the scope of this quality verification program. In depth participation by CPCo continues in this work.

5. Hydrostatic and Pneumatic Leak Testing.

T-1.00 - Hydrostatic and Pneumatic Leak Testing

CPCo has already conducted an extensive evaluation of hydrostatic and pneumatic leak testing and corrective actions relative to such evaluation are being conducted separately from this reinspection program.

6. Special "One Time Only"Testing.

C-2.02 - Drawdown Recharge Test.

This is a test required to have been performed once and which demonstrated acceptable results. The remedial soils program which is not within the scope of this verification program would provide any necessary justification for a repeat of such a test.

7. Previously Documented Responses to the NRC.

C-6.00 - Mechanical Splicing of Reinforcing Bars

This PQCI relates to necessary inspections of the "Cadweld" process of mechanically splicing reinforcing steel. The constructor's processes were the subject of extensive investigation by the NRC in 1973 and 1974 which determined that corrective action had been identified and implemented including requalification of personnel, review of work instructions for Class I work, CPCo QA review of work procedures, and audits of Class I work. Affected mechanically spliced rebar is now inaccessible due to concrete placement. CPCo overinspection of any continued use of this process in remaining construction will be a continuing process.

C-7.00 - Erection of Reactor Building Liner Plate

This PQCI relates to the preparation and installation of steel plates which provide the inner surface for the containment building. The liner is now inaccessible, being backed up by reinforced concrete on the outside and nuclear coated on the inside. Intensive review was made by CPCo in 1974 of the accuracy of liner plate records. Controls implemented after NRC investigation were evaluated and found satisfactory. In 1977, a deformation of liner plate occurred due to freezing of an embedded construction water line. This resulted in selected removal and replacement of steel liner plates. Quality of the liner plate installations have been verified through radiography, and extensive CPCo involvement in the installation and repair. The NRC has reviewed actions taken and closed its reports on the installation of steel liner plates.

C-1.11 - Drilling and Grouting of Rebar

This PQCI provides documented instructions for the drilling and grouting of reinforcement steel and in itself is a corrective action for previously cited deficiencies that such a procedure did not exist. Its usage is documented evidence of the implementation of corrective action.

C-5.10 - Shear Connector Installation

This PQCI is used to assure that the proper installation of shear connectors has been accomplished which tie the supporting beams, steel and concrete floor decking into a composite structure. Since the shear

connector serves as concrete reinforcement, it is not visible once the concrete is placed. NRC reviewed corrective actions relative to installation problems with Nelson stud shear connectors and closed reports relative to this problem. PQCI 5.10-IRs document accomplishment of required inspections.

C-8.30 - Inspection of Surface Preparation Application Touch Up and Repair of Coating

This PQCI addresses the preparation of concrete surfaces and the application of a coating to seal the surface to prevent contamination being absorbed into the concrete. Once the coating is applied, the surface preparation cannot be examined. The final coating can be examined for presence but not for the process steps that applied the coating.

C-1.60 - Concrete Drilling and Cutting Reinforcing Steel

This PQCI describes the quality control steps necessary in drilling concrete to minimize cutting of reinforcing steel. Completion of the PQCI-IR identifies whether proper inspections were made and results encountered and documented. Since the holes will have been drilled, and items either mounted in the holes or the holes grouted, it is not possible to physically inspect the concrete or the reinforcement. This is particularly true where expansion anchors have been used which cannot be nondestructively removed.

8. Post Tensioning Requirements.

C-9.00 - Installation-Post Tensioning Components

C-9.10 - Post Tensioning System Stressing

C-9.20 - Containment Building Tension Reinspection

These PQCIs document the re-routing of tendon sheathing, tendon installation and tensioning. CPCo identified a problem to the NRC in 1977 indicating the misplacement of two tendon sheaths and the omission of two sheaths. The misplacement of the two sheaths brought about approved re-routing of the tendons. The omitted sheaths were replaced. The NRC conducted a special investigation of the corrective measures in May 1977 and deemed them acceptable. A final 50.55(e) report was issued by CPCo in August 1977.

9. Concrete Placement Activities.

C-1.30 - Concrete Placement Inspection

C-1.31 - Inspection of Concrete Activities

The PQCIs relate to inspections during placement of concrete. Where concrete has been placed, inspections will be made in accordance with C-1.40 "Concrete Post Placement Inspection." Where concrete has not been placed, a preplacement inspection will be required before placement when construction is resumed.

C-1.80 Installation of Concrete Unit Masonry

C-1.81 Installation of Concrete Unit Masonry

These PQCIs relate to the installation of concrete block walls many of which have been removed as a result of subsequent plant modifications. The remaining walls can be inspected for presence of the wall and visual quality but not for the process controls necessary to properly erect them.

C-4.10 - Batch Plant Inspection

This PQCI was prepared for necessary controls of concrete batch plant activities. The batch plant has now been removed from the site. Concrete necessary for completion of the plant is procured from an offsite supplier. Currently concrete is procured only for the Soils program and for non-Q construction. Reinspection is limited to review of documents of past operations. Adherence to this PQCI will be enforced on procured concrete for balance of plant safety related constructions when construction is resumed.

10. Field Fabrication

C-2.20 - Field Fabrication of Miscellaneous Steel.

This PQCI addresses fabrication of steel which will have been consumed and erected into items which will be inspected if accessible, under other PQCIs.

11. NSSS Receiving Inspection Activities.

R-2.00 - Receiving Inspection for NSSS Equipment

R-2.10 - Receiving Inspection for NSSS Equipment

R-2.20 - Receiving Inspection for NSSS Equipment Documentation

These PQCIs address the constructor's receiving inspection of components and materials used by the NSSS supplier constructor. In general, the items will have been installed by that contractor. Any accessible attributes will have been confirmed by activities of the NSSS constructor.

12. Other.

C-1.70 - Installation of Prestressed Concrete Pipe

This PQCI covered the installation of the main water line from the river to the cooling pond. This line is now submerged as the pond is full. Inspection of internal surfaces could be performed through use of divers. Integrity has been demonstrated through use of the system.

E-4.0 - Installation of Electrical Cables

One hundred percent reinspection of installed cables has been completed and reported under a separate program. Documentation has not yet been reviewed.

STATISTICAL SAMPLING PLAN
INDEX OF TOPICS

SAMPLING PLAN FOR CPCo QUALITY VERIFICATION PROGRAM

1. Purpose:

To provide a statistically valid method, under the direction of Consumers Power Company, of confirming the acceptable quality status of safety related procurement and construction activities completed and inspected by the Engineer-Constructor Quality Control personnel prior to December 2, 1982.

2. Scope:

This plan applies to closed Inspection Records (IR's) related to specific Project Quality Control Instructions (PQCI's) where the quantity of closed IR's is in excess of one hundred and for which there are no other ongoing or planned programs to confirm quality.

3. References:

MIL-STD-105D Change Notice 2 (March 1964), Sampling Procedures and Tables for Inspection by Attributes.

US NRC IEE Bulletin 79-02, Reinspection of Anchor Bolts.

MIL-HDBK-53-1A 1 FEB 1982 - Guide for Attribute Lot Sampling and MIL-STD-105.

4. Definitions:

Population: The entire quantity of closed (IR's) relating to a specific PQCI.

Time Centered: The term used to describe the ordering of lots, and items within a lot, based upon the time sequence in which an IR was initiated

Homogeneity: Homogeneity implies that a series of units of product should be alike or similar in nature. Homogeneity under this plan will be achieved by utilizing specific project Quality Control Instruction (PQCI) categories covering like activities and generally within a defined time period.

Acceptance Number (AC): The number of nonconformances permitted to be found in a sample of a lot without rejecting the lot for a specific acceptable quality level.

Rejection Number (Re): The number of nonconformances found in a sample of a lot that requires rejection of the lot for a specific acceptable quality level.

Acceptable Quality Level (AQL):	The AQL is the maximum percent of nonconformances that, for the purpose of sampling inspection, can be considered satisfactory as a process average.
Attribute:	An attribute is a characteristic or property which is appraised in terms of whether it does or does not comply with a given requirement.
Inspection by Attributes:	Inspection for which the item or attribute is classified simply as conforming or nonconforming without regard for the degree of nonconformance.
Limiting Quality (LQ):	The term applies to sampling plans that provide not less than a specified percentage of quality protection. Consumers Power Company has selected an LQ of five percent which provides 95% confidence that at least 95% of inspection elements of the lot/population will be acceptable.

Lot: A quantity of items, such as completed inspection records covering the same activity, equal to or less than the total population and representing a subdivision of that population.

Nonconformance: A deficiency in characteristic, documentation or procedure which renders the quality of an item unacceptable or indeterminate.

Pa - Probability of Acceptance: The probability of accepting a lot with a predetermined percent defective, when a given sample plan is used.

Random Sample: A sample taken from a population or lot in which each of the items has an equal chance of being selected, regardless of its quality. If the units in a lot have been arranged without bias as to their quality a sample drawn anywhere in the lot will meet the requirements for randomness [1]. PQCI's are logged in accordance with the date they were opened, totally independent of the

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(1 Mil-Hdbk - 53 -1A Para 10.2)

resulting quality, thus sampling by logged date or other means meets this requirement.

Sampling Plan: A sampling plan indicates for a given lot size the number of items or components from each lot (sample size or a series of sample sizes) which are to be inspected from the lot and the criteria for determining the acceptability of the lot.

5.0 Plan Content

5.1 Detailed Scope: This sampling plan applies to closed Engineer-Constructor IR's related to specific Project Quality Control Instruction (PQCI's) for Balance of Plant safety related materials, components, systems and structures, which are not covered by other ongoing programs to confirm quality. It is applicable to closed IR's where the quantity of closed IRs for a given PQCI is in excess of 100 and where it has been demonstrated by one hundred percent inspection of a significant portion of each population that the accepted quality level of that population has been established. The specific PQCIs and quantities of closed IRs that make up this total population are identified in Appendix A. That appendix also indicates whether both hardware and documentation are planned to be verified or whether documentation alone is planned to be reviewed because of inaccessibility of hardware features.

5.2 Description of Sampling: Sampling inspection is that type of activity in which units of product are selected at random and examined for one or more quality attributes. Sampling inspection is an acceptable way of determining the conformance or nonconformance of items to specified quality requirements. The amount of inspection can be increased where the product quality is deteriorating or reduced where the level of quality is high[1].

(1 MIL-Hdbk - 53-1A)

Statistical sampling methods force one hundred percent verification of quality whenever the required quality level has not been attained. The statistical methods proposed herein are designed to provide 95 percent confidence that the inspectable elements of the entire population are acceptable based upon the acceptability of items or attributes previously 100 percent inspected to provide a satisfactory quality baseline. This is consistent with past NRC recommendations related to reinspections of safety related items[3] and will produce results at least equivalent to those expected from 100% inspection.

The statistical quality control methods proposed are in accordance with MIL-STD-105D Tables I, IIA and VIIA. MIL-STD-105D is probably the most widely used sampling standard in the United States. This Program is a rigorous application of statistical quality control methods to assess the quality of nuclear power plant construction.

(3 NCR IdE Bulletin 79-02, Appendix A)

5.3 Sampling Process: The application of statistically valid sampling plans requires lot sizes to be large enough to permit taking of a sample quantity sufficient to limit the risk of accepting nonconforming items. When quantities are not large enough, one hundred percent reinspection will be performed. Because of the Limiting Quality planned to be used, populations of PQCI items are required to be greater than 50 to be eligible for sampling further; however, CP Co has committed to performing 100 percent inspection of PQCIs having 100 or less IRs. In addition, populations to be sampled must be first qualified by having demonstrated acceptable quality levels through one hundred percent inspection of a quantity of items sufficient to provide adequate confidence the existing quality level is acceptable. When 100% inspections have established this confidence, CPCo will consider that the one hundred percent inspection of a significant portion of each PQCI has established a valid basis for statistical sampling of any remaining quantities.

The statistical sampling plan will be conducted as follows: Two lots for each PQCI will be sampled at normal sampling levels in accordance with MIL-STD-105D, Tables I, IIA and VIIA to a limiting quality of 5 percent at a 95 percent confidance level. If these two successive lots validate that the required level of quality has been maintained, remaining lots will be sampled to the same criteria, but at reduced sampling levels per MIL-STD-105D, Table IIA.

The Executive Manager may recommend to the NRC discontinuance of further sampling where quality levels have demonstrated that past Engineer-Constructor inspections have provided acceptable control of quality.

5.3.1 Switching: The sampling plan will include switching procedures to provide Consumers Power Company the protection provided by the tightened plan, when evidence that the desired quality level is below prescribed levels and the advantage of the reduced plan, when evidence that the desired quality level has been achieved. Due to the known quantities of specific PQCI's available for sampling (non-continuous production run) the following switching rules will be implemented:

- Establish acceptable base quality level through 100% reinspection.
- Single normal plan for two lots.
- From single normal, switch to single reduced, after acceptance of two consecutive lots. Switch back to single normal after the first rejected lot.
- From single normal, switch to single tightened, after the first rejected lot for two consecutive lots, then switch back to single normal if both lots are acceptable. If either or both of the single tightened lots are rejected switch to 100% inspection of lots, until two consecutive lots are accepted.

5.4 Sampling Tables: The following tables indicate sampling information for Single Normal, Single Reduced and Single Tightened sampling plans:

SINGLE NORMAL

Population Lot Size N	Sample Size n	Accept Number Ac	Reject Number Re
2-50	ALL	0	1
51-500	50	0	1
501-1200	80	0	1
1201-3200	125	2	3
3201-10,000	200	3	4
10,001-00	315	7	8

SINGLE REDUCED

2-50	ALL to 20	0	1
51-500	20	0	1
501-1200	32	0	1
1201-3200	50	1	2
3201-10,000	80	1	2
10,001-00	125	3	4

SINGLE TIGHTENED

0-80	All	0	1
80-500	80	0	1
500-1200	125	0	1
1201-3200	200	3	4
3201-10,000	315	5	6
10,001-00	500	10	11

The specific PQCIs and total quantities of closed Inspection Records to which these lot and sample sizes apply are included in Appendix A to the Quality Verification Program.

5.5 Determination of Lot Sizes: A reinspection lot is a collection of units of product (closed inspection records of like activities) from which a sample is drawn and inspected to determine conformance with the acceptance criteria and may differ from a collection of units designated as a lot for other purposes such as production or procurement[4]. The size of the lot is one of the factors that determines the sample size to be used in sampling inspection. For this program the formation of each lot is planned to be at least equal to the normal sample size for the entire population; thus for a population of 1000, the minimum lot size would be 80; the optimal lot size would be 281 or greater.

Normally the total quantity of the population will not be a direct multiple of the lot size. After dividing the population quantity

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(4 Mil-Hdbk - 53 Para 6.4.1)

by the lot quantity, any residual quantity may be combined with the last lot, or be treated separately for sampling convenience so long as the sample size is in accordance with MIL-STD-105D. Lots will be time centered. The purpose of this is to further enhance homogeneity for each lot and to identify and isolate conditions which may have occurred in specific time periods during construction of the Midland Plant. This method of stratifying samples and lots, yields more information for corrective action than sampling the entire population. Quantities used for determining lot sizes will exclude inspection records where reinspections have occurred, since this will preclude counting the same item twice. A limited number of PQCI's cover like activities. These will be grouped, where appropriate, to provide a single population. An example of such grouping would be PQCI's E-6.1 and RW-1.00, "Modification of Electrical Equipment."

5.6 Sample Selection: Samples will be selected by dividing the lot size by the sample size indicated by MIL-STD-105D Tables I and IIA for normal sampling. For example, for a lot of 500, the sample size is 50. In this case any of the first 10 IRs and every tenth IR for a specific PQCI would be selected for reverification. This assures randomness, since the manner of filing is totally independent of the quality of the item and of the person selecting the sample, and all IRs have an equal chance of selection. It also provides a cross section as related to time, since the IRs are

logged by the date they were opened. Where there are multiple lots of the same size, the same method may be used, so that each sequential lot is time centered with the preceding lot and each item sampled is time sequenced within the lot.

5.7 Substitution: Where accessibility is found to inhibit inspection of attributes of a specific item intended for sample reinspection, the Executive Manager-MPQAD has sole authority to direct the selection of a substitute random item for reinspection from the same lot, or in the event that no item(s) is accessible for reinspection, a documentation review of the inaccessible item(s). Justification for this substitution will be documented.

5.8 Increased or Reduced Sampling: The Executive Manager-MPQAD has authority to direct 100% reinspection at any point where the ability to conduct a valid sample reinspection is determined to be impractical. Switching to reduced or tightened sampling will require prior approval by the Executive Manager-MPQAD in accordance with criteria described in this plan.

5.9 Treatment of Reinspection Deficiencies in Verification Sampling Program: Deficiencies identified by reinspections will be recorded on a nonconformance report and promptly reported to MPQAD-QA and others for processing per procedure. The party responsible for recommending the initial disposition of the nonconformance will

review the intended disposition with MPQAD-QA prior to further processing of the nonconformance. The purpose of this MPQAD-QA review is to insure proper treatment of the nonconformance in the sampling analysis. Deficiencies determined to be acceptable to "use as is" will be evaluated by Project Engineering to determine whether the design criteria requirement which the attribute failed to meet will be modified to clarify the inspection requirement. If Project Engineering modifies the requirement on a generic basis, the deficiency will be considered "acceptable" for purposes of sample analysis. The final decision as to whether the deficiency constitutes a sample defect will be made by the Executive Manager-MPQAD. This decision and its justification will be documented.

5.10 Deficiencies Found During Reinspection of Documentation for Inaccessible Attributes: The verification process for inaccessible attributes is discussed in Section 6.5 of the Quality Verification Plan. As noted in that section, any documentation deficiencies will be noted on the verification IR, entered on a nonconformance report and cross referenced to the original IR. The treatment of sampled lots containing nonconformances will be determined on a case by case basis and further verification requirements will be determined taking into account the disposition of the nonconforming condition.

6.0 Documentation and Reports

6.1 Documentation of Results: Results of sampling reinspection will be documented on IR's and statused to specifically identify the PQCI, the lot number, the quantity in the lot, the quantity inspected, the quantity found acceptable, the NCR's identifying any deficiencies and the results of the nonconformance disposition, and acceptability of the lot.

6.2 Documentation of Nonconformances: Nonconforming conditions will be reported and dispositioned in accordance with approved procedures. Disposition of the nonconformances will include necessary actions to be taken on the balance of the lot; e.g., screen balance of the lot for the rejected attributes, or 100% inspect the balance of the lot.

6.3 Reports: The results of the sampling plan for each lot related to each PQCI will be included in reports made by the CPCo BOP Quality Control Superintendent and the Quality Assurance General Superintendent QA as described in section 7.3 of the Quality Verification Program.

7.0 Implementation: This plan will be implemented as directed by the Executive Manager MPQAD. The organizational responsibilities are the same as shown in section 3 of the Quality Verification Program. In addition, MPQAD BOP Quality Control shall have the responsibility of selecting the IR's to be sampled from lot sizes predetermined by MPQAD-QA.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

November 1, 1982

MEMORANDUM FOR: D. Eisenhut, Director, Division of Licensing, NRR

FROM: R. F. Warnick, Acting Director, Office of Special Cases

SUBJECT: RECOMMENDATION FOR NOTIFICATION OF LICENSING BOARD

Enclosed is a Preliminary Notification regarding the installation of undersized electrical cables at the Consumers Power Midland Site and a Consumers Power press release describing the same issue.

Region III has reviewed this information and perceives the issues identified in the enclosures to be material and relevant to the Midland OM/OL proceedings. We recommend that the Midland Licensing Board be notified.

Region III is presently waiting for the followup report (10 CFR 50.55(e)) which should provide additional details and engineering analysis. This report is expected by November 29, 1982.

If you have any questions or desire further information regarding this matter, please call me.

R F Warnick

R. F. Warnick, Acting Director
Office of Special Cases

Enclosures: As stated

cc w/enclosures:
A. B. Davis
R. N. Gardner
R. B. Landsman
R. J. Cook
B. L. Burgess

Dupe ~~8211140495~~ 5pp.

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the staff on this date.

Facility: Consumers Power Company
Midland Nuclear Plant, Units 1 and 2
Docket No.: 50-329
50-330
Midland, MI 48640

Licensee Emergency Classification:
_____ Notification of Unusual Event
_____ Alert
_____ Site Area Emergency
_____ General Emergency
__X__ Not Applicable

Subject: POTENTIAL 50.55(e) REPORT - IMPROPER CABLES

The licensee has reported a potential 50.55(e) to Region III (Chicago) involving the unauthorized substitution of Class 1E cables. To date, approximately 500 Class 1E cables have been reinspected by the licensee. Four of the 500 were below specified size. The four were 14 gauge cables instead of the required 10 gauge cables. These cables feed four decay heat cooldown and return isolation valves, which are safety-related.

The licensee is conducting the reinspection as required previously by Region III to resolve previous Class 1E cable misinstallations. The reinspection of Class 1E cables is continuing. The substituted cables were discovered when inspectors were told to read the cable jacket inscriptions to verify cable size instead of the attached cable tags. The licensee will issue a written report on the findings by November 27, 1982.

Some news media interest is expected. During the week of October 11, 1982, a Detroit television station broadcast a series of reports on construction deficiencies at Midland. One of the allegations in that series concerned unauthorized cable substitutions.

The licensee is preparing a news release. Region III (Chicago) will respond to inquiries.

The State of Michigan will be notified.

Region III was notified of the potential 50.55(e) at 11:30 a.m. (CDT) on October 28, 1982. This information is current as of 4:00 p.m. (CDT), October 28, 1982.

Contact: R. Gardner 384-2524 W. Shafer 384-2656 R. Warnick 384-2599

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Rev. 5/25/82

ATTN. Ron Gardner
RIII

Consumers Power Company NEWS

FOR IMMEDIATE RELEASE

MIDLAND, October 29, 1982 — Consumers Power Company has reported to the U. S. Nuclear Regulatory Commission that its quality assurance department engineers have identified four improperly installed electric cables at the Midland Nuclear Plant.

The cables were found during an additional inspection initiated by Consumers Power Company to verify that all installed safety-related cables conformed to design requirements. To date over 425 cables have been re-inspected. This inspection is only one of numerous inspections and tests now underway or planned. The ultimate objective is to certify and document that the plant has been properly constructed and is ready for operation, according to J W Cook, company vice president in charge of building the project.

The cables, which have been replaced, were installed in July and August 1981, but had not yet been energized. The four cables, containing about 600 feet of wiring, are part of the plant's 10-million-foot electrical system.

The specific error discovered in the four cables was the substitution of a smaller wire size, number 14-gauge conductor, rather than the number 10-gauge specified. The 10-gauge wire can transmit higher electrical current than the smaller wire size. All other cable characteristics; insulation voltage rating and thermal qualifications, number of conductors, shielding, were appropriate.

The improper cables lead to two motor operated valves in the plant's decay heat removal system, part of a backup safety system used to cool the nuclear reactor. "The 14-gauge wire would probably have done the job should it have ever been needed," said Cook, "but it would not have provided the safety margin that is designed into the circuit."

He added that "Whether or not the wire would have performed the design function would have been fully demonstrated during the plant system's testing program scheduled to begin shortly and be completed prior to plant operation."

The discrepancy occurred when the cables were improperly marked after they were cut from larger reels in a separate building and sent into the plant to be installed. The inspection check which occurred after the original tagging did not identify the difference between the cable jacket markings and the tagging information.

The cables in question are among more than 9,000 safety-related cables that will be examined as part of this investigation of all safety-related cables installed at the Midland Plant. The investigation, which will take approximately six months to complete, is being done to verify that each cable is in fact the cable called for in the design and shown in the plant records. The company plans to periodically issue progress reports of the inspection program.

The investigation was organized following allegations of improper cable substitutions in some parts of the plant by an anonymous former worker. These charges were initially made last June, but no specific details have ever been provided to Consumers Power. However, recent media coverage provided enough detail so that an inspection plan could be generated, Cook stated.

Cook said utility officials have tried repeatedly over the past four months to obtain specific information on which to base an investigation.

"The company is committed to determine whether any allegations regarding the plant are valid and to correct any problems identified" he said. "The first results of our reinspection program are inconclusive regarding the allegation as we understand it, but as noted, the program has identified at least one cable package which contained erroneous cables."

Consumes Power has tried to obtain information from the self-styled whistle-blower organization, the Governmental Accountability Project, which initially publicized the charges last June, from the United States Nuclear Regulatory Commission which was given affidavits but has not yet conducted its own investigation, and from news representatives who have seen the affidavits and have periodically over the past four months asked the company to respond to the charges.

2. Qualifications of QC Inspectors

There were numerous instances in the past where the qualifications of QC inspectors were questionable. As a result, Region III has directed CPCo to take control of the QC activities, including requalifying and recertifying Bechtel QC inspectors to Consumers Power Company's standards.

NRC Inspector witnessing of the QC requalification oral exams for the soils remedial work revealed that the requalification effort was not acceptable and resulted in the issuance of a Confirmatory Action Letter (CAL) on September 24, 1982 (Attachment A).

A public meeting was held on September 29, 1982 to discuss the requalification and recertification of QC personnel involved in the remaining safety-related work at the Midland plant. During this meeting, the licensee committed to developing a retraining program for QC personnel and to use a combination of written and oral examinations for the QC requalification effort.

3. Questions Asked by the Board Concerning the Adequacy of the QA Program for Underpinning Activities

Consumers Power Company's program for systematic detection of structure movement and arresting structure movement is described in Specification 7220-C-200(Q), Revision 0 (Attachment 3.A).

Procedures OP40, Monitoring, Reducing, and Reporting (Attachment 3.B), and OP41, Data Acquisition System Investigation in the Event of Observed Large Movements (Attachment 3C) describe the methods for monitoring and assessing structure movement and load data which results in placing the protective plan into effect.

The program and procedures have been reviewed by Region III inspectors and no major concerns were identified.

On August 23, 1982, inspectors Gardner and Landsman conducted an inspection (82-18) of installed underpinning instrumentation to determine the capabilities of the computerized instrumentation system to monitor and respond to simulated structural movements. The inspectors selected three instruments for testing. For each of the selected instruments, baseline data was initially recorded. Then displacement shims were installed and the subsequent computer printout examined to determine the system response to the simulated displacement.

An audible alarm condition was noted after the .110 inch displacement shim was installed. The subsequent computer printout further identified the alarm condition.

During each of the displacement simulations, the underpinning instrumentation system identified, within the allowable tolerances, the displacement simulated and, when required, the resulting alarm condition.

The results of the tests performed on the selected instrumentation were acceptable. No concerns were identified.

During the underpinning activities, the Bechtel Resident Structural Engineer will evaluate and trend the instrument data. Bechtel Construction is responsible for identifying any situation endangering the structure and or life of people involved in the underpinning activities.

4.A Coverage of the QA Program for Soils-related Activities

The Quality Assurance Program for remedial soils activities is described in MPQP1 and MPQP2 (Attachment B). These procedures have been reviewed by the staff and are addressed in the SSER.

To ensure that quality work is performed during the underpinning activities, Consumers Power Company has implemented a third party assessment of the work activities, including an assessment of the Quality Assurance Department.

The Region III office will perform periodic inspections of the remedial soils work in progress. The start of remedial soils work (pier 12) will be closely monitored by the staff and additional work will be authorized when the staff is assured that all quality elements have been met.

4.B Drilling of 42 inch Diameter Hole

These issues are addressed in section 4E of this written testimony (reference MO1-4-2-008).

4.C Loose Sands in Plant Fill

To be provided by NRR

4.D(1) Staff Inspection Reports 82-05 (Attachment)

This inspection report documents an inspection conducted in February and March, 1982, by Dr. Ross Landsman. The inspector identified one item of noncompliance and one deviation from a commitment.

The item of noncompliance represented a significant weakness in the quality of the procedures being used for the remedial soils work. There were four examples of poor quality ranging from failure to review and approve to inadequate procedure content. The significance of this violation was recognized by the assignment of a severity level IV classification.

The deviation addressed in Appendix B of the report identified a failure on the part of the licensee to comply with a commitment made to the inspector during a previous inspection (inspection report 81-12, pgs. 16/17). It was the inspector's assessment that the staff was not fully adequate and were judged not to be commensurable with the complexity of the task.

Page three of the inspection report (82-05) details further commitments made by CPCo regarding the previously described deviation. This concern however, is still under review and will be pursued in future inspections. In addition, in the documented exit interview, the inspector noted that it was clear that upper management was not playing an active role in conveying the principals of Quality Assurance to the working staff. Any further questions regarding the inspection report details will be answered by Dr. Landsman.

4.D(2)(Continued) Inspection Report 82-06 (Attachment)

This inspection report documents an inspection conducted in March, 1982 by inspectors Gardner and Landsman. The report contains two items of noncompliance considered to have a severity level IV significance.

The first noncompliance addresses CPCo's failure to apply the Quality Assurance Program commitments to the installation of the underpinning instrumentation. This concern was identified on March 17 through 19, 1982. The inspectors determined that the installation work had been initiated on March 11, 1982, one day after CPCo had been notified that all remaining underpinning activities were classified as Q, therefore requiring the application of the Quality Assurance Program.

The second item of noncompliance addressed inadequate QC inspections in that 55 class 1E cables were inspected and accepted even though the cables were not correctly routed; and that class 1E cables were inspected and accepted after nonconforming cable reel numbers were identified. These problems were identified during overinspections conducted by CPCo since May, 1981.

The significance of these concerns are twofold; first, the installation of the cables was improper and second, the QC inspections which are intended to identify improper installation, failed to do so. The second concern reflects on the QC inspectors' ability to perform inspections.

To ensure that there are no other misrouted cables, CPCo was directed by Region III to perform a 100% overinspection of all affected safety related cables.

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The concern about QC inspector qualifications is being addressed as described in section 2 of this written testimony.

Any additional questions regarding the details of this report will be responded to by Messrs. Gardner and Landsman.

4.E Status of Consumers Power and Bechtel Nonconformance Reports

NCR #M01-4-2-008 - Remove 36" casing & backfill 42" hole

Remaining item for closure - Repair of disturbed soil zone.

Project Engineering has responded to the NCR as to recommended corrective action. Corrective work was not recommended until the groundwater table had been lowered adequately by the freezewall temporary dewatering system. The procedure for correcting the disturbed soil has been prepared by Mergentime. It is presently awaiting review by Bechtel which is scheduled to be complete by 10/26/82. The proposed work will be submitted to the NRC for approval prior to implementation.

NCR #M-01-9-2-038 - backfill of two 4" x 48' test borings

Project Engineering has responded to the NCR that the holes were properly backfilled and the pour card verified this. QA verified that documents exist that suggest backfilling of the borings. QC verification to close their IR is the only outstanding issue remaining open.

NCR #M-01-9-2-051 - BWST #2 Excavation Beneath Valve Pit Excavation

Part corrective action has been completed in that all disturbed soils were removed and concrete backfill was placed beneath the undermined section of the foundation.

Process corrective action is complete with the present Excavation Permit Procedure which is in effect.

NCR #4245 - Void for OBS #4

To make a determination of the extent of soil disturbed by the construction activity, Technical Specification 7220-C-113(Q) for static cone penetrometer test was issued for construction on 9-28-82. Exploration testing has been delayed until the groundwater table could be lowered by the freezewall temporary dewatering system.

SCREE #51 was attached to NCR #4245. W. Bird wrote a letter #17505 to E.M. Hughes asking Bechtel to set up a program to clear this NCR. Steve Hunt of Bechtel is working on this.

A TSA with Dick Woods has been set up to do the actual investigation program. This program will be presented to the NRC in the near future, and exploration testing started as soon as approval is given.

If any affected areas are identified, Project Engineering will determine whether corrective action is required.

NCR-4199 - Deep "Q" Duct Bank

Bechtel Field Engineering has dispositioned the duct bank to be reworked.

4. F. Broader Assessment of Midland's Design Adequacy and Construction Quality

The NRC has caused CPCo to initiate a third party independent assessment of the Midland construction project as discussed in Mr. J. G. Keppler's testimony.

4 G. The Results of the Staff Evaluation of Drawing 7220-C-45

Staff requirements for this drawing were provided by the staff on May 7, 1982, to Messrs J. Mooney, J. Schaub and others of CPCo. These were:

(1) The seismic Category I retaining wall to the east of the service water pump structure is shown to be located in the non-Q zone. CPCo should revise the drawing to provide for Q-listed control in the vicinity of this wall.

(2) The drawing should be revised to provide for Q control of soils activities for the emergency cooling water reservoir (ECWR), the concrete service water discharge lines, and the perimeter and baffle dikes adjacent to the ECWR.

(3) CPCo should implement Q controls for certain aspects of work outside the Q zone of Drawing 7220-C-45 which could impact safety related structures and systems. Examples include potential removal of fines by dewater ; wells, improper location of borings near the Q boundary, and soil excavations at the boundary involving both Q and non-Q areas.

(4) CPCo should re-confirm that no seismic Category I underground utilities extend beyond the Q area bounds of the drawing.

CPCo's letter of May 10, 1982 notes the intent to revise the drawing to address the ECWR components and other appropriate areas. CPCo has also identified during the May 7 telephone discussion additional measures being implemented to assure proper location for drillings.

On the basis of CPCo's commitment to extend the controls of soils activities to incorporate these staff requirements, the staff approves the use of Drawing 7220-C-45 for defining the areas around safety-related structures and systems within which the restrictions and requirements of the April 30, 1982, Memorandum and Order shall apply.

Region III has taken no action regarding these specific nonconformance reports. The staff recognizes that these reports represent instances where the quality requirements were either not established or not adequately implemented. However, the staff feels that the Work Authorization Procedure should ensure that future work activities in the remedial soils area will be accomplished in accordance with the quality requirements.