Consumers Power Company

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August 7, 1981

Mr J G Keppler, Regional Director
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND PROJECT -
INSPECTION REPORT NO 50-329/81-12 AND 50-330/81-12
FILE: 0.4.2 SERIAL: 13525

Reference: 1. NRC Letter, J G Keppler to J W Cook, dated July 10, 1981

This letter, including all attachments, provides Consumers Power Company's response to Reference 1 which transmitted the subject Inspection Report and which requested our written statement regarding eight items of noncompliance described in Appendix A of Reference 1.

Consumers Power Company

By Tony J Rolls
for James W Cook

Sworn and subscribed to before me on this 7th day of August, 1981.

Barbara R Lawson
Notary Public, Jackson County, Michigan
My commission expires September 8, 1984

WRB/lr

CC: RJCook, USNRC Resident Inspector
Midland Nuclear Plant

CONSUMERS POWER COMPANY'S RESPONSE
TO NOTICE OF VIOLATION
DESCRIBED IN NRC INSPECTION REPORT
NO. 50-329/81-12 AND 50-330/81-12

Item 1 from Appendix A (Item of Noncompliance 50-329/81-12-04 and 330/81-12-04) provides the following:

"10CFR50, Appendix B, Criterion XVI, states in part that, 'Measures shall be established to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective materials and equipment, and nonconformances are promptly identified and corrected . . . the identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.'

Consumers Power Company Program Policy No 16, Revision 9, Paragraph 1.0, states in part: 'Corrective action is that action taken to correct and preclude recurrence of significant conditions adverse to the quality of items.'

Consumers Power Company Quality Assurance Procedure M-2, dated March 2, 1981, requires the Midland Project Quality Assurance trend analysis be implemented. Specifically, for each performance area identify trends requiring corrective action, determine the sources of these trends, and obtain appropriate corrective action commitments. Corrective action commitments are the responsibility of the "Appropriate Individual ."

Contrary to the above, a review of Monthly Trend Analysis Reports and related documentation covering the period July 17, 1980 through March 31, 1981, revealed that appropriate site managers have not routinely established comprehensive corrective actions in response to the identification of adverse quality trends. Moreover, evaluations of adverse trends have not routinely identified the root causes of nonconformances. For example, 22 instances of construction personnel bypassing QC hold points were included in monthly trend analysis, but an adequate analysis to identify the root cause of these occurrences was not performed. (329/81-12-04; 330/81-12-04).

This is a Severity Level IV violation (Supplement II)."

Response to Item 1

A. During the period July 17 to October 15, 1980, the QA engineers who were analyzing trends employed the Monthly Trend Report as the means for notifying the appropriate manager that corrective action was required. This did not provide an effective follow-up mechanism to assure that action was taken. Management reviews of the Trend Reports noted this deficiency and caused the use of Quality Action Requests (QAR) to serve as

formal notification and as a tracking mechanism for any actions identified in the Trend Report.

The NRC inspection during May 18-22, 1981, as provided by examples in the body of the Inspection Report, determined that both the analysis of trends for root cause and the investigations which led to the conclusion that a trend was not indicative of a deterioration of quality, have not been adequately documented. The use of a QAR now provides the mechanism to assure that there is complete documentation of analysis as identifed and any corrective action considered necessary. Each Trend Report is signed by the Quality Assurance Site Superintendent who has the responsibility to review trends for a stop work consideration and is responded to by letter by the Manager of the Midland Project Assurance Department. This response provides concurrence with the actions required by the Trend Report or asks that further action be taken. The review and specific response documents a stop-work was not considered an appropriate action for the trends identified during the reporting periods covered in the inspection.

All six of the examples cited in the body of the inspection report pertained to trend charts C-2 or B-3. Data on these two charts have been consolidated for the period June 1980 through April 1981 and a QA Engineer has been assigned to evaluate the nature of the nonconformances involved in the two areas and to the extent possible will determine the root cause of each trend. He will also make a determination whether any additional corrective action is indicated at this time. Contrary to the inference in the body of the inspection report, it is felt that the level of the inspection function is an important element in the analysis of trends as for any given absolute level of quality the number of noncompliances will be directly proportional to the inspection level. It is also noted that the "real underlying causes" of trends may not be determinable or in fact assignable to a specific cause or causes which would warrant specific process corrective action. Whether a trend is identified or not, individual nonconformances documented on an Audit Finding Report or a Nonconformance Report are reviewed for the necessity to provide process corrective action. As an example, the 22 instances of construction personnel bypassing QC hold points which led to the eventual stop work on a specific work activity had been under review by the Quality Assurance Department. The initial assessment was that the nonconformance reports being written by Bechtel Quality Control were appropriately being written to document an indeterminate condition. This resulted from not knowing when expansion anchors were specifically installed in relationship to the design change which required the hold point.

The inspection report references documentation which "identified further weaknesses" in the trend analysis program. In fact the Site QA Superintendent had been a leader in causing a review of the effectiveness and efficiency of the present trend analysis program which had evolved to its present form partially in response to NRC suggestions made after the project midterm QA review. An alternative trend analysis program is presently being utilized concurrently with the foregoing program which is

required by our procedural commitments. It is expected that this alternative trend analysis program will prove to be an improvement over our present program. This program provides for different criteria on the trend categories and provides for more specific instructions on what to look for, on what to record and on what actions to take when analyzing trend charts. When it is determined that a sufficient data base exists to judge the effectiveness and efficiency of the new program and to assure continuity of the trending analysis, a determination will be made as to formally switching to the new program. We would welcome the opportunity to review this program with the Region III staff prior to its implementation. Compliance with regulatory requirements and CP Co program requirements will be obtained upon completion of the actions associated with the two review teams reviewing the C-2 and B-3 trend data.

Item 2 from Appendix A (Item of Noncompliance 330/81-12-07) provides the following:

"10CFR50, Appendix B, Criterion X, states in part: 'A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures and drawings for accomplishing the activity.'

Consumers Power Company Quality Assurance Program Policy No 10, Revision 8, Paragraph 1.0, states in part: 'Inspection and surveillance are performed to assure that activities affecting quality comply with documented instructions, design documents and applicable codes and standards.'

Contrary to the above, the electrical contractor's Quality Control (QC) inspections of cable termination activities on May 12, 1981, failed to verify conformance to Paragraph 3.11 of Project Quality Control Instruction E-5.0 which states in part: 'Verify that the . . . minimum installed cable bend radius is not violated.' As a result, a violation of the minimum bend criteria for Cable No 2AB2322B, that was observed by the NRC inspector has not been identified by the QC inspections. (330/81-12-07)

This is a Severity Level VI violation (Supplement II)."

Response to Item 2

The condition which is the subject of this item of noncompliance was discovered by a Consumers Power Company employee who was accompanying the NRC Inspector. Consumers Power Company NCR M-01-9-1-061 was written to document the violation of the minimum bend radius criteria on Feeder Cable No 2AB2322B terminated in MCC 2B23. Construction completed the rework of this feeder cable to meet FPE-7.000, Revision 8 requirements (cable terminations) The Project Quality Control Instruction, E-5.0 Inspection Record Number 2AB2322B-1, which covers this particular cable installation, was held open because the

meggering inspection step had not been performed. The inspection record presently reflects unacceptable status for Step 3.11 (minimum level radius). Reinspection of subject cable will be performed in accordance with acceptance criteria of FPE-7.000, Revision 8 at which time it is anticipated that NCR M-01-9-1-061 can be closed out and the cable will be demonstrated to be in full compliance with its requirements. FPE-7.000, "Cable Terminations," Revision 8, was revised and was implemented on May 21, 1981, to include the requirement that "bend radius for training cable/conductor shall be per vendor's requirements." Further corrective action to prevent recurrence was to retrain personnel. Bechtel inter-office memorandum 0-3889 was issued on May 18, 1981, to instruct personnel on the minimum bend radius requirements. The Quality Control Engineer who had erroneously accepted the nonconforming condition was given an eight-hour training program on all phases of termination by a Level II Quality Control Engineer. The above corrective actions will establish measures to assure that the minimum bend radius criteria will not be exceeded.

Item 3 from Appendix A (Item of noncompliance 50-329/81-12-09 and 330/81-12-10) provides the following:

> "10CFR50, Appendix B, Criterion XVI, states in part: 'Measures shall be established to assure that conditions adverse to quality . . . are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.'
>
> Consumers Power Company Quality Assurance Program Policy No 16, Revision 9, Paragraph 1.0, states in part: 'Corrective action is that action taken to correct and preclude recurrence of significant conditions adverse to the quality of items or operations.'
>
> Contrary to the above, as of May 22, 1981, corrective action had not been taken in response to Bechtel Quality Assurance Finding SA-97 dated April 3, 1980, and Consumers Power Company Audit Finding Report M-01-02-106 dated January 27, 1981, which identified the lack of approved procedures for the rework of items which had been accepted by Quality Control. (329/81-12-09; 330/81-12-10)
>
> This is a Severity Level V violation (Supplement II)."

Response to Item 3

Bechtel Construction has developed Administrative Guidelines addressing rework. The Administrative Guidelines provide reference to particular field procedures and outline the means of administratively processing rework information such that proper notifications and coordination are attained. Bechtel Quality Control has also developed Administrative Instructions to indicate the process followed for processing rework items.

Additionally, the field procedures were revised to more clearly address rework in some areas. Specifically, within the electrical area, Field Procedures FPE-3.000, "Installation of Electrical Tray and Conduit;" FIE-3.100, "Class IE Tray Support Installation;" and FIE-3.300, "Class IE Conduit Support," have been revised to address the rework of electrical raceway. These documents are in the approval cycle and are expected to be issued by August 12, 1981. In addition to these procedure revisions, an Administrative Guide E-1.00, "Processing Rework of Scheduled Raceway," was issued for use by Bechtel Construction.

Bechtel Quality Control has developed and issued QC Administrative Instruction No 617, "Instructions for Processing Rework Electrical Items." This instruction details how rework is processed by Quality Control.

The lack of prompt corrective action described in the Item of Noncompliance relative to the Bechtel and Consumers Power Company audit findings was due to considerable discussion between parties on the need, extent and detail necessary to adequately cover the rework activity procedurally. There was a lack of any identified nonconformances relative to items being reworked and as such, there were not and are not now, indications that the rework processes were out of control.

It is noted that the above-referenced administrative guidelines and instructions have been developed for Civil, Instrumentation, Mechanical and Electrical disciplines, and these actions in the Mechanical area are considered responsive to Unresolved Item 329/81-12-15 and 330/81-12-16 concerning procedural provisions to control design revisions on small bore piping and piping suspension systems. In the Mechanical area, the guidelines have been issued and revisions to the appropriate Mechanical procedures have been made and are expected to be issued for use by August 12, 1981.

Full compliance will be achieved upon issuance of the procedures.

Item 4 from Appendix A (Item of Noncompliance 50-329/81-12-11 and 330/81-12-12) provides the following:

> "10CFR50, Appendix B, Criterion V states, in part, 'Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings . . . and shall be accomplished in with these instructions, procedures, or drawings.'
>
> The Consumers Power Company Quality Assurance Program Policy No. 5, Revision 9 states, in part, 'Instructions for controlling and performing activities affecting quality of equipment operations during the design, construction . . . phases of nuclear power nts, such as . . . construction, installation . . . are documented in instructions . . . and other forms of documents,' and the responsible CP departments shall 'also verify through audits that the required instructions . . . are implemented.' Contrary to the above, seven large bore pipe restraints,

supports, and anchors were not installed in accordance with design drawing and specification requirements. (329/81-12-11; 330/81-12-12)

This is a Severity Level V violation (Supplement II)."

Item 5 from Appendix A (Item of Noncompliance 329/81-12-12 and 330/81-12-13) provides the following:

"10CFR50, Appendix B, Criterion X states, in part: 'A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity.'

The Consumers Power Company Quality Assurance Program Policy No. 10, Revision 8 states, in part: 'Inspections and surveillance are performed to assure that activities affecting quality comply with . . . design documents.'

Contrary to the above, licensee construction quality control inspectors inspected and accepted six of seven large bore pipe restraints, supports, and anchors that, in fact, had not been installed in accordance with design drawings and specifications as determined by the NRC inspector. (329/81-12-12; 330/81-12-13)

This is a Severity Level V violation (Supplement II)."

Response to Item 4 and 5

These two items of noncompliance are appropriately addressed together. The item identification used in this response is identical to the identification of the seven specific examples of noncompliance found in Section V 2 of the body of the inspection report. Further analysis of the seven items substantiated approximately only half of the findings. Specifically the following was determined.

1. Items c and d were found upon reinspection to be in nonconformance with their requirements and erroneously accepted by Bechtel Quality Control. Nonconformance reports have been issued for these discrepancies. Compliance will be achieved upon closure of the nonconformance reports.

2. Item e (rigid frame restraint 18-1HCB-2-H13) is not in fact nonconforming to its design requirements nor was there an inspection error.

   QC reinspection of this restraint utilizing standard inspection methods (level and angle finder) indicated that this item is within tolerance. The NRC calculations had indicated a 2.23° out of parallel condition between the upper shim plate and stanchion plate versus 2° allowable.

3. Item f (sliding stanchion assembly 2HBC-124-H7) at the time of the NRC inspection was nonconforming. Further QC inspection revealed that the paint line between the base plate and the wall was broken. Because of this, it is believed that the hanger movement occurred after the QC inspection that accepted the installation. An SCN (No. 26) to M-326 dated June 16, 1981 has been issued rendering the previously inconsistent condition acceptable. No further action on this item is required.

4. Item g (Rigid Frame Assembly 12-2HBC-124-H5R) is in compliance.

   Consumers notes that the NRC Inspector referenced the wrong specification. Specification 7220 C-305(Q) relates to drilled-in anchor bolts The applicable specification for this condition is Specification 7220-C-306(Q) for grouted-in anchor bolts. This Specification (C-306) references no requirements for proximity of abandoned holes (due to the different anchoring mechanism none is required). Therefore, no inconsistency existed nor was there an inspection error. No further action is required.

5. Item h (Anchor 2 1/2" - 1CCB-2-H7) in a similar manner to (g) above is in compliance. The applicable Spec. (M-306) contains no requirements for the proximity of abandoned bolts. (Note: further QC inspection revealed that the 1/4" diameter bolts were, in fact, abandoned). Therefore, no inconsistency existed nor was there an inspection error. No further action is required.

6. Item i (Sway Strut FSK-M 2HBC-137-3-H3(Q)) had not, as yet, been released for QC inspection, it is considered "under construction" and as such, no inconsistency is noted. No further action is required at this time other than assuring at the time of inspection the item is in conformance.

Item 6 of Appendix A (Item of Noncompliance No. 50-329/81-12-13 and 330/81-12-14) provides the following:

"10CFR50, Appendix B, Criterion III states, in part: 'The design control measures shall provide for verifying or checking the adequacy of design such as by the performance of design reviews . . . Design control measures shall be applied to items such as . . . stress analysis . . .'

The Consumers Power Company Quality Assurance Program Policy No. 3, Revision 9 states, in part, 'The design organization identifies the applicable regulatory requirements, design bases, codes and standards; develop the design and specify the design interfaces; perform design verification and prepare design documents.'

Contrary to the above, several of the small bore pipe and piping suspension system designs performed at the site had not been prepared, reviewed and approved in accordance with established design control procedures. (329/81-12-13; 330/81-12-14)

This is a Severity Level IV violation (Supplement II)."

Section V 3 of the body of the report further provides:

"In discussion with the Small Pipe and Hanger Group Supervisor, the inspector was told that the stress calculations will be performed after the stress walkdown approximately ninety days prior to the system turnover for startup testing. The inspector stated that failure to document stress calculations prior to issuance of drawings for construction is in nonconformance with Bechtel EDP-4.37; Revision 2, Paragraphs 7.5 and 8.3, which stated that, Calculations shall be checked and approved, in accordance with these procedures, prior to issuing drawings for construction, . . . Exceptions to this requirement shall be approved by the Project Engineer, and to ensure follow-up and finalization of incomplete work, preliminary calculations tentatively committed to final design work are filed, after review, in a separate binder entitled, Committed Preliminary Design Calculations (CPDC). This is an item of noncompliance, contrary to 10CFR50, Appendix B, Criterion III."

Response to Item 6

Immediately upon identification of the problem by the NRC and consistent with the immediate action letter (IAL) of May 22, 1981; a hold was placed on the further issuance of isometrics to construction without a completed, approved Committed Preliminary Design Calculation in place.

A program was initiated to review and upgrade all small bore piping calculation packages to CPDC status. This program is now complete.

Audits of this activity were conducted by MPQAD on June 16-19, 1981 and June 30 - July 2, 1981. A final audit was initiated the week of August 3, 1981, consistent with Item 7 of the NRC Immediate Action Item Letter (Ref Docket 50-329 and Docket 50-330.) These audits focused on both the programmatic acceptability of the packages (consistency with EDP 4.37 requirements) and technical adequacy. Consumers Engineering provided a technical specialist for the audits). There were no findings resultant from completed audits.

It is noted that the docket number placed on the immediate action letter is in error in that "50-462" should be "50-330."

The specific isometrics identified by the NRC Inspector as not having acceptable piping stress calculations in the design package have been reviewed and these design packages have been upgraded to CPDC status as part of the overall program identified. The completion of the actions specified in the IAL will achieve full compliance.

Item 7 of Appendix A (Item of Noncompliance 50-329/81-12-14 and 330/81-12-15) provides the following:

"10CFR50, Appendix B, Criterion VI states, in part, 'Measures shall be established to control the issuance of documents . . . including the changes thereto, which prescribe all activities affecting quality. These

measures shall assure that documents, including changes, are reviewed . . . and approved . . . by authorized personnel and are distributed to and used at the location where the prescribed activity is performed.'

The Consumers Power Company Quality Assurance Program Policy No. 6, Revision 8 states, in part, 'Measures are included to assure that documents, including changes, are reviewed for adequacy and approved for release by the supervisory personnel of the organization preparing the document, and are distributed according to controlled distribution to the user functions.'

Contrary to the above, an outdated specification was maintained at the small bore piping design group work location and revised calculations were not marked "Superseded" in accordance with the procedural requirements. (329/81-12-14; 330/81-12-15)

This is a Severity Level V violation (Supplement II)."

Response to Item 7

In accordance with the Immediate Action Letter (Ref. Docket No 50-329 and No 50-330, the following steps were taken in response to the NRC finding.

1. MED 4.37-0 was revised (Revision 16, dated 5/21) to include requirements that the specific revision number of the specification or procedure, of which the calculation was based on, is identified in the calculation package. Subsequent audits by MPQAD have confirmed that this requirment has been acceptably implemented.

2. A document control review was conducted by Bechtel Quality Engineering to ensure that all the applicable up-to-date specifications and procedures are in place in the work locations. Cases where superseded and/or uncontrolled references were found were documented. The subsequent audit conducted May 23-29, 1981, by MPQAD found no additional superseded or uncontrolled references. This area is considered to be in compliance.

3. Training in QA Procedures in general, MED-4.37.1 and Specification M-343, was conducted on May 22, 1981. MPQAD assisted in and witnessed this training.

   The instance identified by the NRC Inspector of a superseded calculation not identified as such (calculation 412-2-11) was examined. It was determined that since the Calculation Package Upgrading Program had not uncovered any additional cases, that this item is an isolated case and has been corrected. However, MPQAD has included an additional check of the Superseded Calculation File as part of the final program audit scheduled of the CPDC review program.

Item 8 from Appendix A (Item of Noncompliance 50-329/81-12-16 and 50-330/81-12-17) provides the following:

> "10CFR50, Appendix B, Criterion XVIII states, in part, 'A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the quality assurance program.'
>
> The Consumers Power Company Quality Assurance Program Policy No. 5, Revision 9 states, in part, 'The various Consumers Power Departments and Suppliers who perform a safety-related activity prepare required instructions, procedures and other instructional-type documents prior to initiation of safety-related activities. Reviews of Consumers Power Company departmental procedures for adequacy are conducted during the design and construction phase, . . . by the Quality Assurance Audit and Administration Section within Enviromental Services, Quality Assurance and Testing. They also verify through audits that the required instructions and procedures are prepared and implemented.'
>
> Contrary to the above, licensee and contractor audits of small bore piping design activities at the site did not include detailed review of system stress analysis and follow-up on previously identified hanger calculation problems was not being performed. (329/81-12-16; 330/81-12-17)
>
> This is a Severity Level V violation (Supplement II)."

Response to Item 8

Contrary to NRC statement that audits "did not include detailed review of system stress analysis", three of the audits specifically covered small bore pipe and hanger analysis. These audits were Bechtel Audits No 24-5-1 and AA-MA-2 conducted June through July and September 1980 respectively and CP Co Audit M-01-24-0 conducted in September 1980. The first Bechtel audit team included one Technical Specialist, and the second Bechtel audit team included three Technical Specialists. These specialists provided a specific technical review in conjunction with the overall programmatic review provided by the audits.

The Consumers Power Company Audit utilized the results of the NRC Inspection (Report Docket 50-373 and 50-374, dated August 27, 1980) of LaSalle County Station conducted during August 1980. The NRC Inspection identified problems at LaSalle in the design of small bore pipe including lack of approved procedures, formal indoctrination and training of design personnel, use of inappropriate design criteria and inadequate audit by the LaSalle County Licensee.

Based on this NRC report, the CP Co audit checklists specifically included training and indoctrination of design personnel, presence of procedures and detailed review of selected calculations. The CP Co audit did not result in any findings in the areas of indoctrination, training or procedures. However, it did find six out of nine findings in the area of preparation and checking

of design calculations. The conclusion drawn from the audit was that the overall design process system was satisfactory but that the checking function required added attention. Accordingly, additional indoctrination to the checkers was accomplished as a process corrective action. Follow up on the audit findings was accomplished. All the findings were verified for completion of corrective action by MPQAD before closure.

The above supports the fact that site audit(s) did include review of stress calculations. The statement (in Paragraph 4) that there was no audit follow-up in the first two quarters of 1981 is not valid. The NRC inspection report itself noted that MPQAD Audit M-0-17-1 was performed in April 1981. In addition, Audit M-0-24-0 was conducted in September 1980, and the last finding was closed in January 1981 implying that generic follow-up of the audit was also extended into 1981. It is noted that programmatic commitments do not require quarterly audits of any specific activity.

The audits by CP Co and Bechtel did not find the condition of an absence of CPDCs for the piping system designs in accordance with the design control procedures. The auditors, to the extent this area was investigated, interpreted the design control procedures the same as for Resident Engineering; that being the piping system CPDCs did not have to be in place until later in the design process. The CPDCs for hangers were audited and were found to be in order.

Audits were committed to be accomplished in conjunction with the immediate action letter of May 22, 1981. These audits have confirmed the overall adequacy of the design process as has the results of the review program of the piping design packages. These additional audits have included a technical specialist from Consumers Power Engineering Department.

It is felt that the above demonstrates that compliance has been achieved with regard to the subject of this item of noncompliance.