

JUL 28 1983

MEMORANDUM FOR: Jane A. Axelrad, Director of Enforcement, IE
FROM: W. H. Schultz, Enforcement Coordinator, RIII
SUBJECT: CONSUMERS POWER COMPANY - MIDLAND
PROPOSED CIVIL PENALTIES

We have reviewed the licensee's responses dated March 10, June 24, and July 12, 1983, and have concluded that the violations did occur as stated. The civil penalty proposed for Items A and B is based on the breakdown in the implementation of the licensee's quality assurance program as evidenced by numerous examples of noncompliance with nine of the eighteen different criteria as set forth in 10 CFR 50, Appendix B.

Therefore, we recommend that a \$120,000 civil penalty be imposed (\$60,000 for Item A and \$60,000 for Items B.1, B.2, B.3, B.4, B.5, B.6, B.7, and B.8). However, in view of the \$3500 overpayment made by Consumers Power Company in response to the January 7, 1981 Notice of Violation and Notice of Proposed Imposition of Civil Penalties, the cumulative amount of civil penalties designated in the Notice of Violation is reduced from \$120,000 to \$116,500.

Attached is a draft letter to the licensee with enclosure.

W. H. Schultz
Enforcement Coordinator

Attachment: As stated

cc w/attachment:
J. Lieberman, ELD
Enforcement Coordinators, RI, RII,
RIV, and RV

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PDR FOIA
RICE84-96 PDR

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Schultz
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Davis
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Kappler
7/26/83

Docket No. 50-329

Docket No. 50-330

Consumers Power Company

ATTN: Mr. John D. Selby

President

212 West Michigan Avenue

Jackson, MI 49201

Gentlemen:

This will acknowledge receipt of your letters dated March 10, June 24, and July 12, 1983, in response to the Notice of Violation and Proposed Imposition of Civil Penalties sent to you with our letters dated February 8, and May 23, 1983. Our February 8, 1983 letter concerned violations found during the special inspection conducted at the Midland Nuclear Power Plant, Units 1 and 2, during the period October 12 - November 25, 1982, and on January 19-21, 1983.

After careful consideration of your response, and for the reasons given in the enclosed Order and Appendix, we have concluded that the violations did occur as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties. The proposed civil penalties for Items A and B were based on the breakdown in the implementation of your quality assurance program as evidenced by numerous examples of noncompliance with nine of the eighteen different criteria as set forth in 10 CFR 50, Appendix B.

Included in these violations were examples demonstrating the consequences of the failure to exercise adequate oversight and control of your principal contractor, to whom you had delegated the work of executing the quality assurance program. Item A addressed the consequences of QC supervisors instructing QC inspectors to suspend an inspection when an excessive number of deficiencies were observed. Item B illustrated numerous examples where cognizant personnel failed to follow procedures, drawings, and specifications; first line supervisors and field engineers failed to identify and correct unacceptable work; construction management failed to call for quality control inspections in a timely manner; and quality assurance personnel failed to identify the problems and ensure that corrective actions were taken. These violations occurred as originally stated. No adequate reasons have been provided for not imposing the proposed civil penalties for the violations. However, in view of the \$3500 overpayment made by Consumers Power Company in response to the January 7, 1981 Notice of Violation and Notice of Proposed Imposition of Civil Penalties, the cumulative amount of civil penalties designated in the Notice of Violation is reduced from \$120,000 to \$116,500. Accordingly, we hereby serve the enclosed Order on Consumers Power Company imposing civil penalties in the amount of One Hundred Sixteen Thousand Five Hundred Dollars.

In regard to your June 24, 1983 supplemental response to Item B.6 of the Notice of Violation, we are forwarding your response to the appropriate technical NRC office for their review. We will inform you of the results of that review.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room.

Sincerely,

Richard C. DeYoung, Director
Office of Inspection and Enforcement

Enclosures:

1. Order Imposing Civil
Monetary Penalties
2. Appendix - Evaluation
and Conclusions

U. S. NUCLEAR REGULATORY COMMISSION

In the Matter of)	Docket No. 50-329
)	Docket No. 50-330
Consumers Power Company)	
)	Construction Permit No. CPPR-81
Midland Energy Center)	Construction Permit No. CPPR-82

ORDER IMPOSING CIVIL MONETARY PENALTIES

Consumers Power Company (the "licensee") is the holder of Construction Permits No. CPPR-81 and No. CPPR-82 (the "permit") issued by the Nuclear Regulatory Commission (the "Commission"). These Construction Permits authorize the construction of the Midland Energy Center near Midland, MI. These Construction Permits were issued on December 15, 1972.

II

As a result of a special inspection of the licensee's facilities by the Nuclear Regulatory Commission's Office of Inspection and Enforcement during the period October 12 - November 25, 1982, and on January 19-21, 1983, the NRC Staff determined that a breakdown had occurred in the implementation of the Midland quality assurance program as evidenced by numerous examples of

noncompliances with nine of the eighteen criteria as set forth in 10 CFR 50, Appendix B.

The breakdown was caused by personnel who failed to follow procedures, drawings, and specifications; by first line supervisors and field engineers who failed to identify and correct unacceptable work; by construction management who failed to call for quality control inspections in a timely manner, and by quality assurance personnel who failed to identify the problems and ensure that corrective actions were taken. The NRC served the licensee a written Notice of Violation and Proposed Imposition of Civil Penalties by letter dated February 8, 1983. The Notice stated the nature of the violations, the provisions of the Atomic Energy Act, the Nuclear Regulatory Commission's regulations that were violated, and the amount of civil penalty proposed for each violation. The licensee responded to the Notice of Violation and Proposed Imposition of Civil Penalties with letters dated March 10, June 24, and July 12, 1983.

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Upon consideration of Consumers Power Company's responses (March 10, June 24, and July 12, 1983) and the statements of fact, explanation, and argument in denial or mitigation contained therein, as set forth in the Appendix to the Order, the Director of the Office of Inspection and Enforcement determined that the penalties proposed for the violations designated in the Notice of Violation and Proposed Imposition of Civil Penalties should be imposed.

2

However, in view of the \$3500 overpayment made by Consumers Power Company in response to the January 7, 1981, Notice of Violation and Notice of Proposed Imposition of Civil Penalties, the cumulative status of civil penalties designated in the Notice of Violation is reduced from \$120,000 to \$116,500.

IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended, (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay civil penalties in the total amount of One Hundred Sixteen Thousand Five Hundred Dollars within thirty days of the date of this Order, by check, draft, or money order payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, U.S.N.R.C., Washington, D. C.20555.

The licensee may within thirty days of the date of this Order request a hearing. A request for a hearing shall be addressed to the Director, Office of Inspection and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. Should the licensee fail to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be

effective without further processings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection.

In the event the licensee requests a hearing as provided above, the issues to be considered at such a hearing shall be:

- (a) whether the licensee was in violation of the Commission's requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties referenced in Section II above, and
- (b) whether on the basis of such violations this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard C. DeYoung, Director
Office of Inspection and Enforcement

Dated at Bethesda, Maryland
this day of 1983

Appendix

Evaluations and Conclusions

Each item of noncompliance and associated civil penalty identified in the Notice of Violation (dated February 8, 1983), which was denied, in part, by the licensee, is restated below. The Office of Inspection and Enforcement's evaluation of the licensee's response is presented, followed by conclusions regarding the occurrence of the noncompliance and the proposed civil penalty. In addition, the Request for Reduction of Civil Penalty is also restated below. The Office of Inspection and Enforcement's evaluation of the licensee's request is presented followed by conclusions regarding the proposed civil penalty.

Item B

Statement of Noncompliance

10 CFR 50, Appendix B, Criterion II requires holders of construction permits for nuclear power plants to document, by written policies, procedures, or instructions, a quality assurance program which complies with the requirements of Appendix B for all activities affecting the quality of safety-related structures, systems, and components and to implement that program in accordance with those documents.

Contrary to the above, Consumers Power Company and its contractor did not adequately implement a quality assurance program to comply with the requirements of Appendix B as evidenced by the following examples:

1. 10 CFR 50, Appendix B, Criterion V requires, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Consumers Power Quality Assurance Program Policy No. 5, Revision 12, Paragraph 1.0 states, in part, "Instructions for controlling and performing activities affecting quality of equipment or activities such as...construction, installation...are documented in instructions, procedures...and other forms of documents."

Contrary to the above, the following instances of failure to accomplish activities affecting quality in accordance with instructions, procedures, specifications, or drawing requirements were identified:

- a. Installation of diesel generator engine control panels 1C111, 1C112, 2C111, and 2C112 was not in accordance with the requirements delineated on foundation Drawing 7220-M18-250 in that the foundation bolt washers required by the subject drawing were not installed.

- b. Unscheduled pull box associated with conduits 2BN006, 2BN007, and 2BDA002 was not sized in accordance with the requirements delineated on Sheet 42 of Drawing E-42 in that the 12" x 12" x 6" as-built dimensions of the subject pull box did not conform to the 13½" x 12" x 6" dimension requirements delineated on Sheet 42 of Drawing E-42.

- c. The 1'-10" wall to support dimension required by raceway support Drawing E-796(Q), Sheet 2 of 2, Revision 5, for hanger No. 86 was not correctly translated into the as-built installation of the subject hanger in that the as-built wall to support dimension was 2'-1½" in lieu of the required 1'-10".

- d. The 6'-6" wall to support dimension required by raceway support Drawing E-796(Q) Sheet 1 of 2, Revision 11 for hanger No. 14 was not correctly translated into the as-built installation of the subject hanger in that the as-built wall to support dimension was 5'-5" in lieu of the required 6'-6".

- e. The inspectors identified high strength steel plate placed in the laydown area which was not marked with the material type and grade as required by Field Instruction FIG-9.600, Revision 1.

- f. The inspectors identified various stock steel shapes in the "Q" area with yellow-colored paint on the ends (indicating

the material was non "Q") and various steel stock shapes in the non "Q" area without painted ends (indicating "Q" material), contrary to the requirements of Field Instruction FIG-9.600, Revision 1.

- g. The slots in the muffler support plates were not machined but were determined to be irregular and flame cut, leaving rough slot edges not in conformance with design Drawing M18-425(5)-1.
- h. Jacking plates were not installed beneath the center support plates of Bay 1 diesel generator muffler as required by Drawing M18-250-6.
- i. Procedure FID-2.100, "Outstanding FCR/FCN Retirement," Revision 2 was inadequate in that the design drawings were not changed when an FCR/FCN had been retired and no further reference to the FCR existed on the revised drawing. As a result, the retired FCR C-2103 relating to HVAC structural steel was lost and could not be traced to the design drawing to ensure a complete quality record.
- j. Field Sketch CY-1035 which illustrated the bottom gusset plates for HVAC fan supports was not identified as "Q", nor was there a reference to the affected drawing on the sketch as required by Procedure FPD-5.000, "Preparation of Field Sketches."

- k. Procedure FPD-5.000, "Preparation of Field Sketches," Revision 1 did not require design drawings to reference appropriate field sketches to ensure a complete quality record.
- l. The eight bracing top gusset plates identified on Drawing C-1004, Revision 10, as 5/16" thick were measured by the inspectors to be 1/4" thick in all four diesel generator bays. This change was neither reviewed nor properly authorized.
- m. The as-built gusset plate connections in Bay 1 were not built as identified on Detail 3 of Drawing C-1004. The angle braces were welded together as opposed to having separate welds for each brace. This change was neither reviewed nor properly authorized.
- n. None of the sixteen 1/2" bracing angles identified on Drawing C-1004 were constructed utilizing 1/2" material. This change was neither reviewed nor properly authorized.
- o. Drawing C-1004, Detail 2, required the W10 beam-to-beam connection to be welded. In Bay No. 3, a bolted connection was constructed in lieu of the required welded connection, without review nor proper authorization.
- p. The column cover plate identified on FCR-C4401 was not constructed in Bay No. 3 as required. The plate was slotted instead of solid

as required. This change was neither reviewed nor properly authorized.

q. A section (approximately 18 x 10 x 4 inches deep) of the primary containment wall in Containment Purge Room 702 was removed (by chipping) without obtaining approval as required by FIG-1-111, Revision 4, Concrete Drilling Permit.

2. 10 CFR 50, Appendix B, Criterion III requires, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components. Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization."

Consumers Power Company Quality Assurance Program Policy No. 3, Revision 12, Paragraphs 3.3 and 3.5 state, in part, "Each group or organization performing detailed design translates the applicable regulatory requirements, design bases, codes, standards, and design criteria into design documents, such as...drawings.... Changes to the design require the same review and approval as the original design by the group or organization delegated lead design responsibility."

Contrary to the above:

- a. Measures were not established for the selection and review for suitability of application of "Q" materials associated with the diesel generator exhaust muffler in that design drawings and specifications did not indicate the material identity of the installed muffler saddle supports and plates.
- b. Design Drawing C-147 required bolted bracing connections for the diesel generator building HVAC bracing gusset plates. Field Sketch CY-1035 was used to change the design to welded connections in lieu of the specified bolted connections. This design change was neither properly reviewed nor approved.
- c. Design Drawings C-1004 and C-147 did not specify the sizes of the diesel generator building HVAC fan gusset plates. A "combo" shop work order request was used to design the gusset plates without appropriate review and approval.
- d. The licensee failed to analyze the four diesel generator building monorails as seismic Category I as described in their commitment to Regulatory Guide 1.29, in Appendix 3A of the FSAR.
- e. The licensee designed and constructed thirty-two diesel generator building exhaust system hangers without ensuring that the applicable requirements for "Q" components were included in the design documents.

- f. The licensee purchased armor stone for a "Q" portion of the perimeter dike without translating the applicable regulatory requirements into appropriate specifications and design documents.
3. 10 CFR 50, Appendix B, Criterion VII requires, in part, "Measures shall be established to assure that purchased...equipment...conforms to the procurement documents. These measures shall include provisions, as appropriate, for...inspection at the contractor or subcontractor source, and examination of products upon delivery."

Consumers Power Quality Assurance Program Policy No. 7, Revision 12, Paragraphs 1.0 and 3.4, state, in part, "The Midland Project Office and the Midland Project Quality Assurance Department verify that procurement requirements are met. This is accomplished through... source evaluation and inspection...receipt inspections are made to verify that the items...conform to procurement requirements not verified by source surveillance or inspection...."

Contrary to the above, source inspections at the panel supplier facility and receipt inspections at the Midland site failed to ensure conformance of the internal wiring within diesel generator engine control panels 1C111, 1C112, 2C111, and 2C112 to Procurement Specification 7220-G-5, Revision 1. Paragraph 6.0 of Specification 7220-G-5 states, "All electrical wiring...within the board enclosure shall conform to the highest industrial standards of design and workmanship." An NRC inspection on October 15, 1982 identified the following examples of defective terminations of internal wiring within the subject panels.

- a. The output lead on the Relay Tach device had numerous broken strands at the termination lug.
 - b. The K1 lead on the Relay Tach device had two broken strands resulting in a potential short circuit between the K1 lead and an adjacent conductor.
 - c. The 1- lead on the CB-1 device did not have all strands inserted into the compression lug.
4. 10 CFR 50, Appendix B, Criterion X requires, in part, "A program for inspection of activities affecting quality shall be established and executed...to verify conformance with the documented...drawings for accomplishing the activity."

Consumers Power Company Quality Assurance Program Policy No. 10, Revision 12, Section 1.0 states, in part, "Inspection and surveillance are performed to assure that activities affecting quality comply with documented...design documents...inspection and surveillance are performed according to written instructions."

Contrary to the above:

- a. An inspection program was not established to ensure segregation of cables installed in horizontal trays which used metal dividers to segregate control and instrumentation cables in accordance with design requirements.

b. Quality Control (QC) inspections failed to ensure that activities affecting quality conformed to design documents in that QC inspections performed on July 1, 1981 and documented on QCIR C210-172 failed to detect and identify nonconformances B.1.(1) through (o) of this Notice of Violation. These nonconformances were associated with installation of the diesel generator building HVAC fan support steel.

5. 10 CFR 50, Appendix B, Criterion XIII requires, in part, "Measures shall be established to control the...cleaning and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. When necessary for particular products, special protective environments...shall be specified."

Consumers Power Company Quality Assurance Program Policy No. 13, Revision 12, Paragraph 3.3, states, in part, "Suppliers provide plans...maintain and control items upon arrival at the site."

Contrary to the above, the licensee did not implement a maintenance program to prevent five of sixteen installed diesel generator slide bearing muffler plates from accumulating dirt and dust as required by the vendor's manual.

6. 10 CFR 50, Appendix B, Criterion IX requires, in part, "Measures shall be established to assure that special processes, including welding, heat-treating, and nondestructive testing, are controlled...."

Consumers Power Company Quality Assurance Program Policy No. 9, Revision 12, Paragraph 1.0 states, in part, "Where the required level of quality cannot be measured by inspection only of the item...accomplish these processes under controlled conditions in accordance with applicable codes, standards and specifications using qualified procedures, equipment and personnel." Paragraph 3.3 states, in part, "...Personnel performing special processes maintain records to verify that the required activities were accomplished in accordance with qualified procedures by qualified personnel."

Contrary to the above, during welding of the diesel generator building exhaust piping hanger support steel, the licensee did not verify preheat of existing safety-related structural steel to a temperature of 70°F as required by site specifications and the AWS 1974 Code.

7. 10 CFR 50, Appendix B, Criterion VI requires in part, that "Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings including changes thereto, which prescribe all activities affecting quality...."

The Consumers Power Company Quality Assurance Program Policy No. 6, Revision 12, Paragraph 1.0 states, in part, "Measures are included to assure that documents, including changes,...are distributed according to a controlled distribution to the user functions."

Contrary to the above, measures were not established to control the distribution of changes (red lines) to hanger isometric drawings in that changes to Drawing 1-652-2-25(Q) were not controlled utilizing the Site Document Control Center.

8. 10 CFR 50, Appendix B, Criterion XV requires in part, "Measures shall be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation."

Consumers Power Quality Assurance Program Policy No. 15, Revision 12, Paragraph 1.0, states, in part, "Items, services or activities which are deficient in characteristic, documentation or procedure which renders the quality unacceptable or indeterminate and which is considered significant to safety are identified as nonconformances. Nonconforming items...are identified by marking, tagging, segregating or by documentation. Nonconforming items are controlled to prevent their inadvertent installation or use. Nonconforming items and activities are recorded and are considered for corrective action to prevent recurrence...."

Contrary to the above:

- a. Measures were not established or implemented to determine if materials ultimately restricted (per Nonconformance Report No. 3266) from installation or use in ASME Class I systems were actually installed or used in Class I systems.

b. As of November 10, 1982, two nonconforming conditions identified by the NRC on October 12, 1982, and confirmed by the licensee on October 19 and 25, respectively, had not been documented on a nonconformance report, a quality assurance report, or other appropriate report. The two nonconforming conditions were:

(1) The diesel generator exhaust hangers were not classified, designed, or built as "Q" as committed to in the FSAR.
(See item 2.c.)

(2) The design of the diesel generator monorail was not analyzed to seismic Category I design requirements as committed to in the FSAR. (See item 2.d.)

Evaluation of Licensee's Response

The licensee admits that examples B.1.b., B.1.c., B.1.d., B.1.e., B.1.g., B.1.h., B.1.i., B.1.j., B.1.k., B.1.l., B.1.m., B.1.n., B.1.o., B.1.p., B.1.q., B.2.a., B.2.b., B.2.c., B.2.d., B.2.e., B.2.f., B.3., B.4.a., B.4.b., B.5, B.6, B.7, B.8.a., and B.8.b., did occur as stated in the Notice of Violation. The licensee denies, in part, examples B.1.a. and B.1.f.

NRC Evaluation

Concerning example B.1.a., the licensee contends that since the inspection records for panels 1C-111, 1C-112, 2C-111, and 2C-112 were open with attributes such as washers and torquing not yet inspected, the portion of the noncompliance pertaining to flat washers was not a violation. The licensee's position that open inspection records negate the failure to install the required flat washers is unacceptable. The philosophy of inspecting quality into the job cannot be accepted as a substitute for the philosophy of building quality into the job. The licensee admits the remaining portion of the violation which deals with the omission of bevel washers.

Concerning example B.1.f., the licensee contends that, contrary to the Notice of Violation, all steel in the "Q" area was identified in accordance with procedures. The licensee purports that some manufacturer's marking of this steel led to confusion. At the time of the NRC inspection, the inspectors observed yellow-colored paint on steel in the "Q" area. This condition, as stated in the Notice of Violation, is contrary to the requirements of Field Instruction FIG-9.600, Revision 1. The licensee's contention that this paint was applied by some manufacturers does not mitigate the finding. Site quality control inspections should have detected the nonconforming paint and initiated proper corrective actions. The licensee admits the remaining portion of this violation which deals with the marking of steel in "non-Q" areas.

Conclusion

These violations did occur as originally stated. The information in the licensee's response does not provide a basis for modification of the enforcement action.

Request for Reduction of Civil Penalty

Pursuant to 10 CFR 2.205, Consumers Power Company respectfully requests that the NRC reconsider the amount of civil penalty proposed to CPCo for the violations cited in the NRC's letter, dated February 8, 1983, J. G. Keppler to J. D. Selby. The Company does not contest the validity of the violations and agrees that a civil penalty is warranted, but believes that certain mitigating factors should be considered.

The NRC's criteria for enforcement actions (at 47 Federal Register page 9991, March 9, 1982) sets forth specific criteria for increasing or reducing base civil penalties, and provides in part as follows:

"2. Corrective Action to Prevent Recurrence. Recognizing that corrective action is always required to meet regulatory requirements, the promptness and extent to which the licensee takes corrective action, including actions to prevent recurrence, may be considered in modifying the civil penalty to be assessed. Unusually prompt and extensive corrective action may result in reducing the proposed

civil penalty as much as 50% of the base value shown in Table 1. On the other hand, the civil penalty may be increased as much as 25% of the base value if initiation of corrective action is not prompt or if the corrective action is only minimally acceptable. In weighing this factor consideration will be given to, among other things, the timeliness of the corrective action, degree of licensee initiative, and comprehensiveness of the corrective action - such as whether the action is focused narrowly to the specific violation or broadly to the general area of concern."

We believe that our actions to correct the situation at issue have been timely and have been conceived and organized mainly through our own initiative. Most important, however, is that our program to correct these deficiencies is comprehensive and far reaching.

Shortly after receiving feedback on the NRC's inspection findings, the Company launched major, extensive corrective action. The Company halted the majority of the Category I work of its prime contractor, and laid the groundwork for a verification of past inspections and statusing of incomplete work. The work stoppage resulted in the layoff of more than 1,000 workers. The Company also initiated major, generic corrective action addressing the specific areas of NRC inspection findings. The Company's entire plan is entitled the Construction Completion Program, and included steps responding broadly to the NRC's and Company's areas of concern. This was addressed at length in the Company's

letter of January 10, 1983, J. W. Cook to J. G. Keppler and further discussed at a Public Meeting with the NRC at Midland on February 8, 1983.

The corrective action undertaken by the Company was not narrowly focused on the specific violations identified by the NRC. The work reduction extended to all major safety related structures on-site, not merely the diesel generator building which was the focus of NRC's inspection. The verification program begins in the auxiliary building, includes the reactor buildings and diesel generator building as well as the service water pump structure.

The Construction Completion Program, which is the organizational basis for the generic corrective action, will encompass and structure the remaining preturnover systems and area work to be done at the Midland site, (excepting soils, HVAC and NSSS work). The Company's willingness to accept the NRC's suggestion that we take direct control of the project QC staff formerly under Bechtel supervision extends broadly to the entire job, and involves a major commitment of additional manpower and resources in recertification, training, and inspection activities.

The Company does not contest the NRC's decision to increase the civil penalty on the basis of certain other factors specified in the enforcement guidelines. We request, however, that consideration be given in determining the amount of the penalty to the corrective action taken and planned by the Company.

Evaluation of Licensee's Response

While the licensee's corrective actions are recognized as being both comprehensive and far reaching, these actions are viewed as having been dictated by the nature and severity of the noncompliance identified during the diesel generator building inspection. In addition, we perceive the issuance of nonconformance reports in March 1983 (items B.1.b., B.1.c., B.1.d., B.1.e., B.1.f., and B.5) for nonconforming conditions identified by the NRC during the period of October 12 - November 25, 1982, and January 19-21, 1983, to be indicative of less than prompt corrective action. Finally, the licensee's decision to halt the majority of the Category 1 work of its prime contractor was based upon the knowledge that the NRC would initiate escalated enforcement actions to stop the work unless the licensee acted promptly.

Conclusion

The information in the licensee's request does not provide a basis for reduction of civil penalty.

draft

Enclosure 1

Significant SALP Report Findings for the Midland Nuclear Generating Station

General Observations

Followup inspections were conducted in March and April 1982 to evaluate the significance of the quality control (QC) inspection deficiencies identified during the special team inspection of May 1981. These followup inspections indicated that QC inspections were not properly identifying deficiencies in the installation of safety related components. As a result of these deficiencies and due to recurring problems in the licensee's remedial soils work activities increased NRC inspection effort was initiated through the formation of a special Midland section comprised of inspectors dedicated solely to the Midland plant.

To aid in the evaluation of the as-built condition of the plant the Midland Section conducted a special inspection of the Diesel Generator Building during the period of October 12 through November 25, 1982. This inspection identified significant violation which demonstrated a breakdown in the implementation of the licensee's quality assurance (QA) program and

which resulted in the licensee's decision to suspend some safety related work and formulate a construction completion program to provide assurance that safety related structures and systems were constructed as designed. In addition, the NRC imposed a civil penalty of \$120,000.

As a result of the suspension of portions of safety related work activities and the licensee's proposed construction completion program the Region III Regional Administrator determined that the SALP-3 appraisal for Midland would address only the remedial soils work activities (Soils and Foundations), the Babcock and Wilcox (B&W) work activities (Safety Related Components), and the Heating, Ventilating, and Air Conditioning (HVAC) work activities (Support Systems).

Functional Areas

1. Soils and Foundations

Overall performance in this functional area has continued to indicate a declining trend and remains an area of concern. The decline was due to a continued lack of attention to detail and a continuing inability on the part of the licensee to properly implement the requirements of the Midland QA program.

2. Safety Related Components

Performance in this functional area remains adequate. However, there are indications that unidentified quality problems may exist in this area.

3. Support Systems

Performance in this functional area has declined. The decline was due to the lack of management attention to identified problems and the lack of timely corrective action to resolve those problems.

Enclosure 2

SALP 3

Preliminary

U.S. Nuclear Regulatory Commission
Region III

Systematic Assessment of Licensee Performance

Consumers Power Company

Midland Nuclear Generating Station, United Kingdom

Docket Nos. 50-329; 50-330

Report Nos. 50-329/83- ; 50-330/83-

Assessment Period

July 1, 1981 through March 31, 1983

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I. INTRODUCTION

The NRC has established a program for the Systematic Assessment of Licensee Performance (SALP). The SALP is an integrated NRC Staff effort to collect available observations and data on a periodic basis and evaluate licensee performance based upon those observations. SALP is supplemental to normal regulatory processes used to insure compliance to the rules and regulations. SALP is intended primarily from a historical point to be sufficiently diagnostic to provide a rational basis for allocating future NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant construction and operation.

A NRC SALP Board, composed of the staff members listed below, met on May 24, 1983, to review the collection of performance observations and data to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, Systematic Assessment of Licensee Performance. A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee safety performance at ~~Byron~~ ^{Midland} Nuclear Station, Units 1 and 2, from ~~January 1 through December 31, 1982.~~ ^{July 1, 1981}

The results of the SALP Board assessments in the selected functional areas were presented to the licensee at a meeting held on ~~June 13, 1983.~~ ^{March 31, 1983}

SALP Board for ~~Byron~~ ^{Midland} Nuclear Station:

- C. E. Norelius, Director, Division of Project and Resident Programs
- R. L. Spessard, Director, Division of Engineering
- J. A. Hind, Chairman, Director, Division of Radiological and Materials Safety Programs.
- ~~D. W. Hayes, Chief, Projects Section 1B~~
- ~~L. A. Reyes, Chief, Test Programs Section~~
- ~~D. H. Danielson, Chief, Materials and Processes Section~~
- ~~W. Forney, Senior Resident Inspector, Byron~~
- R. C. Knop, Chief Projects Branch 1
- T.N. Tambling, Chief, Program Support Section
- ~~J. S. Berggren, Program Support Section~~
- ~~M. A. Ring, Test Programs Section~~

II. CRITERIA

The licensee performance is assessed in selected functional areas depending ^{upon} whether the facility is in a construction, pre-operational or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observation.

One or more of the following evaluation criteria were used to assess each functional area.

1. Management involvement in assuring quality
2. Approach to resolution of technical issues from safety standpoint
3. Responsiveness to NRC initiatives
4. Enforcement history
5. Reporting and analysis of reportable events
6. Staffing (including management)
7. Training effectiveness and qualification.

However, the SALP Board is not limited to these criteria and others may have been used where appropriate.

Based upon the SALP Board assessment each functional area evaluated is classified into one of three performance categories. The definition of these performance categories is:

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used such that a high level of performance with respect to operational safety or construction is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective such that satisfactory performance with respect to operational safety or construction is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used such that minimally satisfactory performance with respect to operational safety or construction is being achieved.

III. Summary of Results

<u>Functional Area Assessment</u>	<u>Category 1</u>	<u>Category 2</u>	<u>Category 3</u>
1. Soils and Foundations'			X
2. Containment and other Safety Related Structures		Not Addressed in this report	
3. Piping Systems and Supports		Not Addressed in this report	
4. Safety Related Components		X	
5. Support Systems		X	
6. Electrical Power Supply and Distribution			Not Addressed in this report
7. Instrumentation and Control Systems			Not Addressed in this report
8. Licensing Activities		X	
9. Quality Assurance			Not Addressed in this report
10. Preoperational Testing			Not Addressed in this report
11. Radiological Controls			Not Addressed in this report
12. Environmental Protection and Independent Measurements			Not Addressed in this report

The licensee is rated category 3 in this area only because of the NRC/CPCo Work Authorization Procedure, the CPCo/Bechtel Excavation Permit System, the independent third party overview, and continued scrutiny by the NRC staff.

IV. Performance Analyses

1. Soils and Foundations

a. Analysis

* add section here

Thirteen inspections (or portions of inspections) were performed in this area. During this SACF period a total of nine noncompliances and two deviations with NRC requirements were identified as follows:

- examples of*
- (1) Severity Level IV - failure to follow procedures and failure to develop adequate procedures (329/82-03; 330/82-01)
- (a) failure to revise design drawings according to site procedural requirements.
 - (b) failure to develop ^{an} adequate excavation procedure.
 - (c) failure to assure design verification according to site procedural requirements.

- examples of*
- (2) Severity Level IV - failure to develop adequate procedures (329/82-05; 330/82-05).
- (a) access shaft work was initiated without having a reviewed and approved procedure.
 - (b) failure to develop adequate procedures to control specification design changes.
 - (c) failure to develop adequate specification for permanent dewatering wells.

④ During this SALP period the licensee finalized and initiated steps to implement the Remedial Soils measures necessary to correct previously identified soils deficiencies. The NRC's review and approval of the design of the Remedial Soils measures is documented in Supplement No. 2 to the Millard Efty Evaluation Report issued in October 1982. The steps taken by the licensee to implement the Remedial Soils measures during this SALP period include:

- (1) the excavation of the excess shafts to elevation 609.
- (2) the installation of six temporary underpinning piers.
- (3) preparatory work for the Service Water Pump Structure underpinning.
- (4) initiation of temporary dewatering system for the Service Water Pump Structure.
- (5) initiation of probing for buried utilities adjacent to the Service Water Pump Structure.
- (6) the installation of the permanent dewatering system wells.
- (7) the installation of the auxiliary building underpinning instrumentation system.

- (d) failure to develop an adequate procedure to prepare or implement overinspection plans.
- (3) Deviation - failure to provide a qualified Civil QA staff (329/82-05; 330/82-05).
- (4) Severity Level IV - failure to establish a QA program which provided controls over the underpinning monitoring system (329/82-06; 330/82-06).
This finding resulted in the issuance (by the Bureau) of a Corrective Action Letter on March 31, 1982.
- (5) Severity Level V - failure to install anchor bolt in accordance with site procedures (329/82-11; 330/82-11).
- (6) Deviation - failure to use approved installation/coordination forms to document the installation of underpinning monitoring instrumentation (329/82-11; 330/82-11).
- (7) Severity Level IV - failure of specifications to identify the location of well sampling points (329/82-18; 330/82-18).
- (8) Severity Level IV - failure to assure that the slope layback at the Auxiliary Building access shaft was constructed in accordance with design.

(9) Severity Level IV - examples of failure to establish measures to control the issuance of documents (329/82-21; 330/82-21).

- (a) failure to use a controlled copy of a Project Quality Control Instruction (PQCI) to prepare a QC recertification exam. this finding resulted in the issuance of a CAL on September 27/82
- (b) failure to control QC manuals

(10) Severity Level III - failure to translate applicable regulatory requirements concerning the purchase of armor stone for a "Q" portion of the perimeter dike into appropriate specifications and design documents (329/82-22; 330/82-22).

(11) Severity Level III - failure to maintain current remedial soils drawings (329/83-01; 330/83-01).

As a result of noncompliance item (4) an investigation was performed by OI to determine whether material false statements had been made by the licensee's staff in regards to the ^{instigation} status of the auxiliary building underpinning ^{monitoring} instrumentation. Although the investigation report (Reports No. 50-329/82-13 (EIS); 50-330/82-13 (EIS)) failed to provide conclusive evidence that a material false statements had been made, the cover letter to the subject report stressed in addition an investigation by OI was being conducted during this evaluation period to determine whether the licensee violated the April 30, 11

Atomic Safety and Licensing Board (ASLB) Order which suspended all remedial soils activities on "Q" soils for which the licensee did not have prior explicit NRC approval. This investigation focuses on the licensee digging below the "Deep Q duct bank" apparently without NRC approval.

Remedial soils work is being accomplished in conjunction with a work authorization procedure instituted as a result of the ASLB order. Additionally, the licensee has instituted an excavation permit system for soils work and an independent third party (Stone and Webster) is overseeing the soils work making simultaneous reports to the NRC and the licensee.

? A management meeting was held at the site on August 11, 1982 to discuss the potential Board Order violation. A CAE was issued in regards to this matter on August 12, 1982.

b. Conclusion

The licensee is rated category 3 in this area. Although this is the same rating as the previous assessment period the licensee's overall performance in this functional area has continued to indicate a declining trend. NRC findings during this assessment period indicate a continued lack of attention to detail by the licensee and a continuing inability on the part of the licensee to properly implement the requirements of the Midland SA program. The licensee is rated category 3 in this area only because of the NRC/CPCo Work Authorization Procedure, the CPCo/Bechtel Excavation Permit System, the independent third party overview, and continued scrutiny by the NRC staff.

2. Safety Related Components

a. Analysis

Ten inspections were performed in this area during the evaluation period. Three of the ten inspections were performed by two Argonne National Laboratory personnel retained under contract to the NRC to provide increased inspection attention in this area. The ten inspections involved the observation of large and small bore hanger installations (including scrubbers and restraints), receipt and installation records, modification of the reactor pressure vessel supports, auxiliary feedwater internal header modification, and containment structural steel welding. Within the scope of this effort one item of noncompliance was identified as follows:

- Severity Level V - Failure to follow procedure regarding the tagging of a valve in the welding fabrication area. (329/83-01; 330/83-01)

In this area the licensee resources appear adequate however, Region III inspectors have indications that quality problems exist which have, to date, not been identified. Higher priority work requirements have prevented increased inspection attention.

b. Conclusion

The licensee is rated Category 2 in this area. This is the same rating as the previous assessment period.

3. Support systems

a. Analysis

Portions of four inspections were performed covering Heating, Ventilation, and Air Conditioning (HVAC) welder certification, HVAC welder procedure qualification, and HVAC material traceability. No items of non-compliance or violation were identified during these inspections.

As a result of a licensee audit of Photon Testing, Inc., the licensee suspended welding of safety related HVAC work. Photon Testing, Inc. had previously been contracted by the licensee to qualify welding procedures and certify welders for HVAC fabrication and installation. The cumulative audit findings made the credibility of some of the certification of previously certified welders, as well as the adequacy of some of the welding procedures, indeterminate. Due to the audit findings the NRC imposed a hold point for the restart of safety related HVAC welding.

A subsequent attempt by the licensee to demonstrate to the NRC that affected HVAC welding procedures had been qualified and were ready for implementation demonstrated that the welding procedures were still inadequate. As a result, the NRC did not authorize the licensee to restart safety related HVAC welding.

b. Conclusion

The licensee is rated category 2 in this area. Although this is a lower rating than the previous assessment due to the lack of management attention regarding difficulties in developing adequate HVAC welding procedures and the lack of timely corrective action to resolve these problems.

V. Supporting Data and Summaries

A. Noncompliance Data

Facility Name: Midland, Unit 1

Docket No. 50-329

Inspections: No. 81-14 through 83-05

Functional Area Assessment	Noncompliance and Duration Severity Level					Dev
	I	II	III	IV	V	
1. Soils and Foundations			(2)	(6)	(1)	(2)
2. Containment and Other Safety-Related Structures						not addressed in this report
3. Piping Systems and Supports						not addressed in this report
4. Safety-Related Components					(1)	
5. Support Systems						
6. Electrical Power Supply and Distribution						not addressed in this report
7. Instrumentation and Control Systems						not addressed in this report
8. Licensing Activities						
9. Quality Assurance						not addressed in this report
10. Preoperational Testing						not addressed in this report
11. Radiological Controls						not addressed in this report
12. Environmental Protection and Independent Measurements						not addressed in this report
TOTALS						

(1) Indicates items common to both Units 1 and 2.

~~Supporting Data~~

Noncompliance Data

Facility Name: Midland, Unit #2 Docket No. 50-33
Inspections No. 81-14 through 83-05

Functional Area Assessment	Noncompliance and Duration Severity Level				
	I	II	III	IV	V
1. Soils and Foundations			(2)	(6)	(1) (2)
2. Containment and Other Safety-Related Structures					not addressed in this report
3. Piping Systems and Supports					not addressed in this report
4. Safety-Related Components					(1)
5. Support Systems					
6. Electrical Power Supply and Distribution					not addressed in this report
7. Instrumentation and Control Systems					not addressed in this report
8. Licensing Activities					
9. Quality Assurance					not addressed in this report
10. Preoperational Testing					not addressed in this report
11. Radiological Controls					not addressed in this report
12. Environmental Protection and Independent Measurements					not addressed in this report

TOTALS

(1) Indicates items common to both Units 1 and 2.

B. Report Data

1. Construction Deficiency Reports (CDR)

During this SALP period 19 CDR's were submitted by the licensee under the requirements of 10 CFR 50.55(e).

a. Operating procedures must be modified to require at least one reactor cavity cooling fan in service during normal plant operation.

b. For certain control circuits, a voltage below the limits for proper operation of the motor control center starter coils was calculated. This line voltage drop was a direct result of currents passing through long control cables.

c. The design of electrical components associated with the main steam isolation valves does not conform to the channel separation criteria in Reg. Guide 1.75; also, satisfactory seismic qualification reports have not been submitted.

d. Rodent damage has occurred in electrical penetration wiring and cables.

e. The auxiliary feedwater level control valves are fed from Class 1E instrument control power instead of Class 1E preferred power supplies as specified in the FSAR.

f. The existing design of the auxiliary feedwater system pump turbine driver steam admission valve interlock system

would block steam entry and prevent proper operation.

g. It has been determined that instrument string error in the steam generator level circuits, under accident conditions exceeds that allowed to establish steam generator ECCS control setpoints.

h. Recent inspections at three ^{operating} B&W plants indicated damage to the internal auxiliary feedwater header assemblies. New external headers will provide all functional requirements.

i. During an engineering review it was discovered that some Q-related equipment is located in the auxiliary building that is cooled by a non-safety grade HVAC system.

During an accident,
this could result in some Q-equipment being lost.

j. B&W supplied non-seismically qualified transmitter mounting brackets for transmitters forming part of the reactor coolant pressure boundary.

k. Approximately 80% of the radiation monitoring modules, manufactured by Victoreen, were found to be nonconforming. This was due to a significant QA breakdown at the supplier.

l. During field modifications of 460 V class 1E motor control centers supplied by ITE-Gould it was discovered that some of the control power transformers were undersized.

m. Class 1E power cables were pulled and

installed as the wrong size.

n. ACI 349, Appendix B, issued August 1979

specifies that shear lugs in embedment designs shall be considered effective only in compression

zones. Some Midland embedment designs,

which were completed and installed prior to

this date, do not meet this new criteria.

No specific features to mitigate

o. A frazil ice formation on the service water

intake structure are contained in the design

of the service water intake structure.

p. The design of the suction piping for the

auxiliary feedwater system did not include

overpressurization protection.

- q. Un acceptable workmanship conditions have been identified on electrical control panels and cabinets supplied by various suppliers
- r. Bailey Controls Company NI/RPS and ECCAS cabinets have terminal blocks which are fastened to the termination panels by Tinnerman Nuts. These nuts could become loose.
- s. Class 1E electrical control cabinets appear to have insufficient clearances from adjacent equipment or walls.

2. Part 21 Reports

The licensee issued no Part 21 reports during the reporting period.

C. Licensee Activities

The main construction areas during the evolution period were NSSS work, electrical equipment, conduits, cable trays, cables, HVAC work, remedial soils work, ^{small and large bore pipings} pipe hangers and snubbers. INSERT A Preoperational testing was conducted on the component cooling water system, the decay heat removal system and the fuel transfer system.

Unit 1 and 2 were reported by the licensee to be 79% complete. Fuel load dates are estimated to be February, 1985 and October 1984 respectively. The NRC feels that these fuel load dates are very optimistic.

INSERT A

As a result of the D.G. building inspection the licensee halted ^{on December 2, 1982,} safety-related work, with the exception of the following: system layup ~~activities~~, hanger and cable reinspections, post turnover work, HVAC ^{work}, B&W work, remedial soils and Bechtel engineering.

D. Inspection Activities

The routine inspection effort by the NRC consisted of 39 inspections during the evaluation period.

A special team inspection (Reference 82-22) was conducted to assess the adequacy of implementation of the quality assurance program. This assessment was done for the most part in the D. G. Building where all work was performed subsequent to 1980. The inspection resulted in the licensee suspending some safety related work on December 2, 1982.

E. Investigations and Allegations Review

LAST

3. A number of allegations were received during this SALP period regarding deficiencies in the implementation of the CPC QA/QC program. These allegations include six affidavits supplied by the Government Accountability Project (GAP). Investigations to resolve the issues identified within these allegations were initiated during this SALP period.

1. An investigation was conducted to determine whether material false statements had been made by the licensee's staff in regards to the installation status of the

auxiliary building monitoring instrumentation.

The investigation report (Reference 82-13) failed to provide conclusive evidence that a material false statement had been made.

2. An investigation was being conducted during this SALP period to determine whether the licensee violated the April 30, 1982 ASLEB order which suspended all remedial soils activities on "Q" soils for which the licensee did not have prior explicit ^{NRC} approval.

F. Escalated Enforcement Action

1. Civil Penalties

A Civil Penalty for \$20,000 was issued during this evaluation period in regards to the adverse findings during the D.G. building inspection (reference 82-22). This licensee has asked for a mitigated amount and is under review by the NRC staff.

2. Orders

The ASLB issued an order, which suspended all remedial soils activities on "Q" soils for which the licensee did not have prior explicit NRC approval on April 30, 1982. They issued a second clarifying

order on May 7, 1982.

G. Administrative Actions

1. Corrective Action Letters

a. A letter of understanding was issued by the licensee on March 31, 1982, in response to deficiencies observed during the inspection of the auxiliary building monitoring instrumentation. (Reference 82-). This matter is also discussed in Section V.E.1. of this report.

b. A Confirmation of Action Letter (CAL) was issued on August 12, 1982, in response to a potential ASLB order violation (Reference 82-). This matter is also discussed in Sections IV.1.2^{and V.E.2} of this report. Resolution of these concerns was still under investigation at the end of the SALP period.

c. A CAL was issued on September 24, 1982, in response to deficiencies observed during the inspection of remedial soils & C inspectors recertifications (Reference 82-).

d. A letter of understanding was issued on December 30, 1982, in response to deficiencies observed during the D. G. Building inspection (Reference 82-22). ~~This matter is also discussed in sections~~ The licensee this matter is also discussed in Sections I. C and II. F. 1. of this report. A civil penalty for \$120,000 was issued subsequent to this letter.

2. Management Conferences

a. On July 24, 1981 a management meeting was held to discuss inspection findings pertaining to irregularities in control and review of small bore piping ^{system} design packages.

2. Management Conferences

~~a. On October 5, 1981 a meeting was held~~

b. On January 12, 1982 a management meeting was held to review and discuss recent changes to the Midland QA organization and the QA program for the remedial soils work.

c. On March 30, 1982 a management meeting was held to discuss NPC findings in the installation of underpinning monitoring instrumentation.

~~On April 13, 1982 a meeting was held~~

d. On April 26, 1982 a meeting was held to present to CPCo Management the SALP 2 Board findings.

e.g. On May 14, 1982 a meeting was held during which the licensee presented a preliminary report of the results of the electrical cable reinspections.

f. On June 21, 1982 a meeting was held to discuss CPCo's response to SALP.

g. On August 5, 1982 a meeting was held to further discuss CPCo's responses to SALP.

h. On August 11, 1982 a management meeting was held to discuss a potential violation of the ASLB order of April 30, 1982.

- i. ~~H.~~ On August 26, 1982 a management meeting was held to discuss QA problems.
- j. ~~K.~~ On September 2, 1982 a management meeting was held to discuss the Quality Improvement Plan.
- k. ~~M.~~ On September 29, 1982 a management meeting was held to discuss the integration of QC activities into MPCAD.
- l. ~~N.~~ On October 5, 1982 a meeting was held to discuss the CPCO-TEPA proposal concerning the IDVP.
- m. ~~P.~~ On October 29, 1982 a meeting was held to discuss Bechtel performance/problems.
- n. ~~R.~~ On November 5, 1982 a meeting was held to discuss S&W qualifications for

performance of remedial soils third party
overview.

o p. On January 18, 1982 an enforcement
conference was held to discuss the D.G.
Building findings.

p. n. On February 8, 1982 a management meeting
was held to discuss the CCP and the
IDCVF. In addition the NRC announced
the imposition of a \$120,000 fine due to
D.G. Building findings.

g. n. On March 7, 1982 a meeting was held
to further discuss the CCP

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STAFF EVALUATION OF CONSUMERS POWER COMPANY
PROPOSAL TO USE STONE AND WEBSTER MICHIGAN, INC.
TO CONDUCT THE THIRD PARTY
CONSTRUCTION IMPLEMENTATION OVERVIEW OF THE
MIDLAND NUCLEAR PLANT

1.3.1

Purpose and Background

The purpose of this document is to provide an evaluation of the Consumers Power Company's (CPCo) proposal to use Stone and Webster, (S&W) Michigan, Inc. to conduct the third party overview of the Construction Completion Program at Midland. Consumers' proposal is documented in their letter of April 6, 1983, in response to the NRC's March 28, 1983, request for additional information. The CPCo commitment to provide for an independent third party Construction Implementation Overview (CIO) has been reviewed and found acceptable. This evaluation provides the basis of the NRC's acceptance of Consumers proposal.

The purpose of the CIO is to provide an independent overview of the Construction Completion Program (CCP) to assure the program is adequate ~~written~~ and will be properly implemented. This is to ensure that the construction of the facility can be completed in conformance with the Commission's regulations and the construction permit.

The S&W overview of the CCP will be independent from and supplemental to the normal NRC inspection program. As part of their inspection program, the NRC inspectors will monitor and review the S&W CIO.

The use of S&W as the third party overviewer will provide additional assurance of proper implementation of the quality program. In addition, it will function as a mechanism to allow members of the public and the NRC to regain confidence in the program.

The results of the overview program will be submitted to the Regional Administrator in a weekly report of CCP activities overviewed and any problems identified.

The NRC has required communications between CCo and S&W to follow certain protocol to assure S&W's independence is being maintained and to assure public and NRC knowledge of S&W activities and correspondence. It should be noted that the protocol provides for a monthly meeting, open to the public for observation, to review S&W activities for the month and to discuss problems identified by the overview.

CCo's Proposed Third Party Reviewer

CCo has proposed that Stone and Webster perform an independent overview of the Midland project CCP. The NRC staff has considered CCo's submittal of April 6, 1983, and responses to Region III questions, public comments, and the clarification of submitted comments and additional comments received at

public meetings held in Midland, Michigan on February 8, 1983, and August 11, 1983. In addition, the staff conducted numerous ~~meetings~~^{meetings} and telephone conversations with representatives of the Government Accountability Project (GAP) and the intervenors. In considering CPCo's proposal, the staff has used as guidance the letter of February 1, 1982, from Chairman Palladino to Congressmen Ottinger and Dingell, (attached) which sets forth the "competence" and standards that have been applied by the Commission in determining the acceptability of proposed third-party reviewers.

S&W Competence

The staff has considered the qualifications of both the S&W organization and the individuals proposed as team members to conduct the independent overview of the Midland project. Input to the staff's review included the information supplied in CPCo's submittal, the responses to the staff's inquiries, the S&W submittals and the staff's existing knowledge of S&W performance at other nuclear power plants.

The staff has reviewed S&W's experience in assessing nuclear construction projects, particularly its performance in independent reviews of design, construction, and quality assurance undertaken for utilities as input to the NRC's operating license reviews.¹

The staff has also reviewed the qualifications of the key persons proposed for the project, as set forth in the April 6, 1983, April 11, 1983, and May 19, 1983, submittals, and has concluded that the team has significant stated experience in

¹Reference Secy 82-414, "Diablo Canyon Design Verification Program Phase II Recommendations"

① Augmented Inspection Program

Areas where we want to concentrate

1. Electrical
2. I & C
3. High Pressure Piping
4. Hangers & Supports for piping
- * 5. Corrective Action System (identification of problem, correcting & preventing)
- * 6. Receipt, Storage & Handling
7. Structural Steel
8. Subcontractor Welder Qualifications
- * 9. Management Overview System
10. Soils

Manpower

- | | | |
|----|------------------------------------|----------|
| 1 | Welding & NDT | Contract |
| 2 | I & C | " |
| 3 | Mechanical | " |
| 4 | Electrical | " |
| 5 | Startup & Test | " |
| 6 | Burgess | |
| 7 | Shafer | |
| 8 | Cook | |
| 9 | Sarkner | |
| 10 | Landsman | |
| 11 | Full Time ^{etc} Secretary | |

Need 5 people on contract to NPC for 6-12 months. To be located at Midland.

② QC Inspection Management

Require CPC to remove Bechtel from all QC work and have all QC inspections report to CPCo.

③ QA Management

Remove Marguglio & Bird from present position. Put Curland in charge of QA

④ Attitude

Get Leo Davis convinced that building quality into the plant is the thing that CPC & Bechtel both want. If Leo knows that is what is wanted, he will deliver the product.

⑤ Exits

Exit with Don Miller as well as QA

⑥ Commitments & Releases

Put in writing

⑦ Vertical Slice

Look at some aspect of safety-related system from design thru construction. To be done by independent third party hired by Bechtel.

Problems

1. Responses - failure to address root cause & take full & decisive action.
2. Bechtel overruling Consumers
3. Material storage
4. Cable support & storage
5. Impulse line separation and identification
6. Drop-in anchors not properly installed
7. QA Director failed to support QA Site Supervisor
8. Constructors field engineer failed to take action when out of spec condition was identified.
9. Bechtel reluctant to give info to NRC
10. Licensee wears blinders in addressing problems - grout & drilling
11. Licensee seeks NRC opinion and plays one part of NRC against another.
12. Licensee is argumentative.
13. Feedwater Isolation Valve Pit excavation
14. Drilling into underground pipes & ducts
15. Hangers - Licensee tried to minimize significance & extent of problem.
4% given deficiencies.

16. Licence using NRC as consultants

17. Electrical cables - 5% misrouted.

18. Soils - NRC keeps finding problems

19. Reluctance to put responsibility of quality work on construction firm.
They want to inspect quality ins
rather than build it in.

Docket No. 50-329
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

During our inspection of December 20-22, 1982, our inspector was requested to review and authorize 46 prioritized separate work activities in accordance with the NRC/CPCo Work Authorization Procedure of August 12, 1982. During this review of the initial ten items, our inspector concluded that he was being asked: (a) to review drawings and procedures which personnel had not previously looked at before giving to him, let alone reviewed for adequacy; (b) to review revisions of drawings that personnel knew were being revised; (c) to review drawings which apparently were not ready for construction to begin because all the details were not worked out yet; and (d) to approve activities on the premise that the inspector's concerns will be incorporated during the construction of the activity.

These conclusions were based upon reviewing the following activities:

a. SWPS deep-seated benchmarks - Drawing C-2004, Revision 1

- (1) The strap spacing for holding the benchmark riser pipes rigid during underpinning was not ~~indicated~~ delineated on the drawing. Subsequently, Bechtel Field Engineering indicated that revision 2 of the drawing was ~~being~~ being issued ~~out~~ which picked this up.

(2) Four out of the six benchmarks appeared to be located in the permanent underpinning wall. Personnel were asked if any thought went into protecting the riser pipes either during installation or while actually digging the underpinning walls. The cognizant field engineer stated, "I have no idea."

(3) The top locations (elevations) of the benchmarks were not clearly delineated on the drawing.

(4) There was no provision on the drawing to ensure that during coring of the bottom SWPS slabs the hole would not blow in, i.e., remove underlying soil from the structure. Personnel indicated that they were planning to install a standpipe before coring all the way through the floor, but no actual details had been worked out to date.

(5) Four of the benchmarks were to be read off the floor of the pumphouse. The inspector was informed that the next revision of the drawing would illustrate all readings ~~on~~ ^{off} the walls of the pump structure. *one would be read*

b. SWPS construction dewatering - Drawing C-1320, Revision 1, C-1320-1, Revision 1 and C-1321, Revision 0;

- (1) The drawings illustrated two gradations of filter sand to be used in the dewatering well construction. However, they did not indicate which filter sand gradation went into which well.
- (2) There was no method specified to install the filter sand in the smaller interior dewatering wells.
- (3) Notes on the drawings indicated to install a standpipe before coring all the way through the bottom slab to balance the hydraulic pressure. However, the notes did not indicate that to balance the hydraulic pressure, a column of water inside the standpipe greater than the water level outside the structure must be maintained.

c. SWPS to CWIS hydraulic seal - Drawing C-2038, Revision 0

- (1) The drawing indicated that installation is "Q". However, there ^{was} a handwritten note on the drawing contrary to this indicating that only the inspection of the work be "Q". The inspector requested to see an official FCN, DCN, FCR, etc. that changes the drawing, not an informal note.

d. FIVP four point jacking - Drawing C-1494, Revision 2

- (1) Notes on the drawing indicated not to exceed 1820 kips for each unit, they also indicated that if shims at any location become loose, further jacking shall stop and the RSE notified. They go on to say that shim tightness shall be checked to determine whether shims come loose or not during jacking. The notes fail to document the main purpose of the proof load test; to determine if the as-built temporary supports can support the entire weight of the FIVP. If liftoff of all four corners does not occur, we have no assurance that we are supporting the entire weight of the FIVP.

In summary, the NRC will not continue to serve as a consultant to CPCo management. Remaining work activities will be reviewed and approved by CPCo management prior to issuance to the NRC for authorization. It is your responsibility to ensure that in the future all information provided to the NRC is complete and reviewed.

R. F. Warnick, Acting Director
Office of Special Cases

Landsman/lc Gardner Shafer Warnick

APRIL

16 - (NRC) comments on Management Appraisal Plan

APRIL

11 - (EPC.) Request to repair MSIV'S

13 - (EPC.) Request to repair MSIV'S

APR 11

6 - (NRC) Appeal Board Decision

April

1 -

2 - (CPC) Request to remove 6 Q relief valves

3 - (NRC) Removal of 6 Q Relief Valves
- (NRC) Release of additional module
- (NRC) Board Notification (conversations overheard)

5 - (NRC) Exam Notification (TDI)

March

27 - (CPCo) CCP additional module request
- (WRC) IE comments on Management Approval Plan

28 - (WRC) TDI Mechanical Release

29 - (CPCo) meeting minutes (2/29/24)

Mark

7-(CPCO) Management Appraisal Plan Submitted

8-(NRC) CCP hold point release

9-(S+M) CIO Report # 38

21-@@@

March

1 - (S+W) CIO Report # 37
- (NRC) 2.206

6 - (CPC) Turbine R-6L

FEBRUARY

27 - (S&U) CTO Report # 36

FEBRUARY

18-

21- (NRC) IDCVP Responsibilities

February

15 - (TERA) IDCVP Ninth monthly status report

- (CPCO) Amended response to NOV

11-11-50 to 11-11-50 (CPCO)

16 - (NRC) NRC Report of HJAC
(GFI) Statement on Midland

17 - (S&W) CIO Report # 35

February

2 - (CPCO) Release of FSW-41

9 - (CPCO) Licensure Margin Review Report
(SW) CIO Report # 9

10 - (GAP) 2.206 comments
(TERA) Future direction of IDCVP
(NRC) Response to SECY-84-42

13 -

February

1- (S+W) Assessment Meeting
(S+W) CIO Report # 33

2- (CPC) Bulletin 79-02
(CPC) Partial Release Request

6- (CPC) Response to confirmatory order

January

1/29

1/30

1/31 - (NRC) 2.206 Denial

January

26 - (SW) FCR/FCN Review - ELECTRICAL
- (NRC) NRR Position on R.G. 1.29

27 - (SW) CIO Report # 32

January

18- (S+W) CIO Report #31

20- (E.H.) IZCVF meeting summary
- TELECON WITH DENNIS SANDERS
- ILL. Policy Issue & Allegations

January

12 - (NRC) order to perform management audit

January

11 - (SW) CIO Report #30

JAN 1984

1

4- (APTECH) FLUED Head FITTING:

- (S&W) CIO Rep. # 29

- TERA - DGD evaluation

(S&W) - CIO NIP's

5- (WRC) closeout of CI investigation 3-82-20

December

27- (NRC) System interaction Meeting & Jour
(NRC) " " " "

28- (SDU) CIO Report # 28
- (CPCo) Response to Bulletin 83-05

29- (NRC) "important to safety" letter.
(NRC) Request for info - Ireland L&G's

December

21 - (S+W) CIO Report # 27

22 - (GAC) Letter
(CPCO) Hanger reinspection
(CPCO) FCR/TCN Stop work order

December

15 - (WRC) Confirmatory Order; 2.206 response

16 - (TERA) IDC V Meeting summary
- (TERA) IDC V seventh monthly status report

20 - (WRC) Coalbed forecast data

December

8- (CPCo) Egypt qual.

13- (CPCo) SWO - HVAC

- (CPCo) MPQAD/QC

- (CPCo) GEO Construction Testing

- (CPCo) Procurement

- (CPCo) | SW

- (CPCo) | SW

- (CPCo) | Specialist

- (CPCo) ✓ GEO MPQAD - QC

- (CPCo) ✓ MPQAD/Bechtel

13- (StW) CTO report # 26

14- (LPCo) MPQAD - qual SW

December

5 (S+U) - CIO Report # 25
(GAP) - Stanislov exhibit # 140

November

30 - (NRC) Followup action for Board Notification

November

22 - (S+W) Overview of the CCP
- (S+W) CIO Report # 23

29 - (S+W) CIO Report # 24
- (S+W) Project QA Plan

November

14- (CPCo) News Release (Construction Completion date,
(S&W) CIO Report # 22

15- (TERA) 6th Monthly Report

16- (CPCo) Response to interrogatories
- (CPCo) QAR response to (S&W) N1R004

17- (NRC) Trip Report Summary for Millbrook HVAC Design Audit
(S&W) overview of the CCP
(CPCo) Tube-line Corp nonconforming mat'l

21- (NRC) Order - Management Audit

November

1 - Summary of Jack Fore visit on Midland DGB
- (TERA) IDCV P Meeting Summary

3 - (NRC) Statements by individual 2

8 - CIO Report # 21

9 - (NRC) Summary of 3 in private meeting

(c) Caseload Forecast Panel Review

order 30

) Meeting - Koppeler, Selby, Howell

c

October

- 11 - failure modes for electrical equipment
- NRC aux Bldg Audit
- (S&W) CIO Report # 17

- 12 - ASLE OIR
- (S&W) CIO letter

- 14 - (GAP) Rebuttal of CIO concision
(CPCO) Audit of DGF

- 17 - (S&W) CIO Report # 18
- (TERA) 5th monthly status report

October

- 4- (CPC) items ready for closure
- (NRC) acknowledgment of check for \$116,500
 - (NRC) followup meeting on Construction Completion Inter

- 5- (NRC) Selection of IDC V mods.
- (S+W) CIO report
 - (NRC) Board Order violation

- 6- ASLB memo + order
- intention to litigate Dow issues
 - Billie Burke - caseload forecast panel
 - 2.206

- 7- (NRC) modification to Construction Permit - CCI

October

:- (S+U) CIO Report # 16

Sept.

25 - Letter from Lone Tree Council

26 - (CPC) payment of \$716,500
~~- air protection system allegations~~

28 - (CPC) Seismic Margin Review Report

29 - (NFC) Sew Operational

30 - (S&W) CIO Report # 15
- (CPC) CIO protocol

Sept.

15 - (NRC) J+W Protocol
- Memorandum and Order (fslc)

16 - Mems for D.H. Danielson re: ZACK MAT'L SAMPLING
- SFLP Report

19 - (E+W) CIO Report # 14

20 - (TERA) Fourth monthly status report

Sept.

- 8 - August status report
- (NRC) meeting notice (aux. Bldg.)
 - (NRC) meeting notice (DGB)
 - (NRC) telephone log memo for ceselond meeting
 - exact ground information on Chairman Pallebrino's visit
 - (CPCO) 83-11 thank-you letter

9 - (NRC) Clarification of NRR assistance in Eoh area

12 - (SEW) CIO Report #13

13 - ASLE Memorandum and Order

14 - (NRC) 83-11 thank-you letter

September, 1983

1- (NRC) additional information on Box investigation

2- (NRC) NRC and intervenor meeting report

6- (EAP) letter

- (S+W) CIO Report #12

- (CPCO) extension request (generic letter 83-2E)

- (CPCO) response to draft SALP Report

7- (NRC) revised information regarding GDC 51

- (TERA) IDC/V meeting summary

(Aug)

22 - (S+W) CIO Report # 10

24 - (S+W) Seis Report # 48

29 - (CPCo) EN83-07A (imposition of CP)

- (NRC) July monthly status report

- (NRC) order imposing \$116,500 CP

- (S+W) CIO Report # 11

- (NRC) Revision to IE inspection modules

30 - (NRC) Review of licensee response concerning protest

- (S+W) commitment letter

- (CPCo) Seismic margin review report

31 - (NRC) Request for de Saval followup

- 11- NRC & Intervenor Public Meeting notes
- J. Harrison Public Meeting Notes
- " " Intervenor " "

12- (S&W) CIO report # 9

- 17- (NRC) Meeting site visit by NRC staff to see site
- Staff, IISVP

18- Meeting to discuss S&W third party review of CCP

19- (NRC) Comments on CCP

- (Victoreen) CCP R 21 report

5 - (CPCo) letter to FSLC (press release)

7 - [unclear] [unclear] & [unclear]

- [unclear] [unclear] report # 8

9 - (NRC) Construction completion schedule for [unclear]

- [unclear] [unclear] & [unclear] for additional [unclear]

- (CFC) Summary of response to STW CTO Report

- (NRC) [unclear] part 21 - [unclear] [unclear] [unclear]

10 - (STW) Sols report # 46

- (CFC) [unclear] response to [unclear] [unclear]

- (NRC) June Status Report

August, 1983

- 2 - (CPCo) Review water temperatures for continuous flush
head penetrations
 - (CPCo) Initial Test Results - New City.
 - (NRC) Review of Low Steam, termination of contract
-
- 3 - (CPCo) Review the Lines
 - (NRC) NFF contract on Midland CCF
-
- 4 - (S&W) CIO Report # 7
 - (NRC) Meeting with G. Lunde on 2.206
 - (S&W) Side Report # 45

25 - (NRC) memo to F.I. (ZACK Part 21):

- (S+W) CIO report # 6

27 - (NRC) memo to en CCF

- (NRC) with ratification 82-109

28 - (NRC) memo to CF for 29 & irregular

- (S+W) 2nd side authorization

- (S+W) 3rd side report # 40

29 - (NRC) with ratification

- 15 - (CPCo) Response to NRC Region II questions on soils
- (TERA) IDCVP weekly monthly status reports
 - (CPCo) concerns Dow Chem. actions
 - (CPCo) memorandum on completion of plant

18 - (NRC) Site - E. Gardie (inspection of Midland water works)

- 21 - (NRC) Evaluation of E. Gardie concerns
- (NRC) SFLP report

22 - (NRC) Final for IDCVP

- (CPCo) QA Topical Report
- (NRC) letter to E Gardie
- (NRC) acceptance of TERA Corp for IDCVP
- (ZACK) Shop fabrication of plant. S. L. Co.

July, 1983

5 - (NRC) Request for review of CCF

6 - (NRC) Comments on CCF

~~7 - (NRC) Request for Review~~

8 - (NRC) CCF

12 - (COW) CTO report = 4

13 - Congressional testimony

14 - (COW) CTO procedure

21 - Sulp report

28 - (S+W) CIO QCI 10.01

- (S+W) CIO report # 3

- (NRC) letter to Mr. Forno

29 - (NRC) authorization for ZAC to House

30 - CIO management committee review

June, 1983

3-(CPCo) CCP submitted

10-CPCo, CCP submitted

13-GFF, 2.206 request

17-(CPCo) Sub-line fittings

~~22-GFF welding allegor~~

23-(NRC) Request for review of CCP submitted

27-(NRC) letter to Sinclair

- (NRC) authorization to initiate team training for CCP

May, 1983

13 - (NEC) Board notification

12 - 22 CVP Program

24 - (NEC) Violation of Hold Bag Side - Board notification

27 - (TERA) Joint Monthly status report

April, 1983

6 - (CFCo) CCF third part,

18 - (NEC) Sulp appraisals

22 - (CFCo) CCF question response

March, 1983

2- IEB 82-04 (Bunker Fund)

28-(NRC) questions regarding CCF

February, 1983

15 - license performance on Piers 12E + 12W

24 - (N.F.C) acceptability of S+W for kids third party

DEC., 1982

29 - Identification of protection system instrument line

NOVEMBER, 1982

19- (NRC) Letter to ACRS

September, 1982

17 - Midland Section communications

August, 1987

- 18 - memo concerning Midland (Warwick to Lippitt)
- meeting concerning Midland performance.

July, 1982

• 3 - Indicator of particular license performance

JUNE, 1982

8 - (ACRS) interim report on Midland

- (Comamerica Secord) 10 CFR 21 report on Sandstone

21 - suggested changes for Midland project

May, 1982

21-^(CAO) Response to Craft Ship report

11 - 4 I 4 Doc
 - - 4TB ~~PAR~~ Doc
 5 - 4T. 4 I 207 I
 7 - 8 I
 8 - 3 I 4T 1 Doc

5/15/7

11 - 4 I 4 Doc
 - - 4TB ~~PAR~~ Doc
 5 - 4T. 4 I 207 I
 7 - 8 I
 8 - 3 I 4T 1 Doc



Draft

Docket No. 99900785/82-01

The Zack Company
ATTN: Mrs. Christene Zack DeZutel
President
4600 W. 12th Place
Chicago, Illinois 60650

Gentlemen:

This refers to the inspection conducted by Mr. L. E. Ellershaw of this office on August 3-6, 1982, of your facility at Cicero, Illinois, associated with the manufacture of heating, ventilation and air conditioning (HVAC) systems and to the discussions of our findings with you and members of your staff at the conclusion of the inspection.

This inspection was conducted as a result of the receipt by the Nuclear Regulatory Commission (NRC) of allegations pertaining to implementation and enforcement of the Zack Company quality assurance program, and was performed in conjunction with an investigation by the Chicago Field Office of the NRC Office of Investigation. Investigative findings are contained in NRC Report No. 99900785/82-02. The main purposes of the inspection were to assist the investigative staff in the evaluation of identified concerns, and to establish whether HVAC system manufacture was consistent with applicable codes, contractual and regulatory requirements. To make this determination, the primary areas selected for inspection were welding process control, nonconformances and correc-

tive action, audits, indoctrination and training, document control, QA records, procurement document control and implementation of 10 CFR Part 21.

Areas examined and our findings are discussed in the enclosed report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During the inspection, several instances were identified where the implementation of your QA program failed to comply with NRC requirements. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

Please provide us within 30 days from the date of this letter a written statement containing: (1) a description of steps that have been or will be taken to correct these items; (2) a description of steps that have been or will be taken to prevent recurrence; and (3) the date your corrective actions and preventive measures were or will be completed. Consideration may be given to extending your response time for good cause shown.

The response requested by this letter is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

It is apparent from the results of this inspection, that our inspectors have established that significant deficiencies exist in the implementation of your quality assurance program relative to HVAC system manufacture. Accordingly, it is requested that you furnish to this office, in addition to the corrective action measures requested above for each identified nonconformance, a description of those management actions that have been or will be taken to provide for future effective implementation of your quality assurance program.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within 10 days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this

office to withhold such information. If your receipt of this letter has been delayed such that less than 7 days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

The Zack Company

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Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

John T. Collins
Regional Administrator

Enclosure:

1. Appendix A - Notice of Nonconformance
2. Appendix B - Inspection Report No. 99900785/82-01
3. Appendix C - Inspection Data Sheets (6 pages)

APPENDIX A

The Zack Company

Docket No. 99900785/82-01

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted on August 3-6, 1982, it appears that certain of your activities were not conducted in accordance with NRC requirements as indicated below:

Criterion V of Appendix B to 10 CFR Part 50 states: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Nonconformances with these requirements are as follows:

- A. Section 10 of the QA Manual, Revision 3, states in part, "All welding for standard duct work, Class 1 duct work, and Seismic duct work shall be in strict accordance with these established procedures, and deviations of any kind shall not be permitted. . . ."

Welding Procedure Specification WPS-1, a Gas Metal Arc Welding procedure, paragraph 13.0 states in part, "This procedure is qualified in accordance with AWS D1.1-79, Section 5, Part B" AWS D1.1-79, Section 5, Part B, states in part, "In preparing the procedure specification, the manufacturer or contractor shall report the specific values for the essential variables that are specified The changes set forth in 5.5.2.1 through 5.5.2.5 shall be considered essential changes in a welding procedure and shall require establishing a new procedure by qualification"

Part 5.5.2.3, Gas Metal Arc Welding (GMAW), identifies the following as essential variables: A change in electrode diameter; a change of more than 10% above or below the specified mean amperage for each diameter electrode used, and an increase of 25% or more or a decrease of 10% or more in the rate of flow of shielding gas or mixture. WPS-1, when used for the welding of ASTM A-36 material, was qualified with a 0.045 inch diameter electrode at 195 amps and with a gas flow rate of 20 cubic feet per hour (CFH).

Contrary to the above, the NRC inspector observed deviations being permitted and changes to essential variables being made without the procedure being requalified during GMAW of duct rings for the Midland Plant, in which the welder was using 0.035 inch diameter weld wire, 125 amps, and a gas flow rate of 30 CFH.

- B. Procedure QCP-29, "Plant Procedure for Welding Electrode Control," Revision 0, dated September 5, 1979, Section 5 states in part, ". . . The Foreman will record daily on the Weld Material Control Sheet: The welder's name and symbol; date; weld procedure to be used; type, size, and amount of rod issued; rod heat number, . . . and amount returned"

Section 7 states in part, ". . . After electrodes have been removed from its original package, it shall be protected so that its characteristics or welding properties are not affected Traceability of electrodes is accomplished by checking dates on (the) specific Zack Company traveler and weld material control sheet."

Contrary to the above, the following conditions were identified:

1. Electrodes (bare wire on spools) were not being protected, in that three spools of stainless steel electrodes, each of a different type, were observed under a work bench in an uncovered condition. Further, two spools had been issued on December 17, 1981, and the other on April 16, 1982.

2. Traceability of these electrodes would be precluded when used at a time later than the issue date, in that the date of issue as shown on the weld material control sheet would not coincide with the date of actual welding on a specific Zack Company traveler.
- C. QA Manual Section 6, Revision 3, dated September 26, 1977, states in part, "Fabrication instructions(s) are provided to the fabrication shop by Engineering in the form of Shop Travelers that specifically set forth all necessary data. This will include: . . . any special processes to be used such as machine rolled, welded construction, etc. . . ."
- AWS D1.1, Section 2, Part A, paragraph 2.1 states in part, "Full and complete information regarding location, type, size, and extent of all welds shall be clearly shown on the drawings Detail drawings shall clearly indicate by welding symbols or sketches the details of groove welded joints and the preparation of material required to make them"

Contrary to the above, full and complete information pertaining to welds, weld joints, and material preparation, was not shown on shop travelers/detail drawings provided to shop personnel. The only information provided was the welding procedure specification number, which does not delineate the above information.

- D. QA Manual Section 10, page 2, Revision 3, dated April 1, 1981, states in part, "All welding . . . shall be in accordance with our established welding procedures, and subject to the requirements, tests, and inspection set forth in the welding procedures."

Contrary to the above, instructions, procedures, or drawings did not include appropriate qualitative acceptance criteria for welds. Therefore, without acceptance criteria being stipulated, specific inspection requirements were not set forth in welding procedures.

- E. QA Manual Section 7, page 4, Revision 1, dated March 1, 1977, states in part, "The controlled manufacturing system is continued in the fabrication shop to insure that the activities employed affecting quality are being satisfactorily accomplished.

"Shop supervisor shall be responsible for checking all shop fabrication tickets to insure that they are complete in all respects

"They shall be checked for method of fabrication, welded seams or machine rolled, or any other special process that is required and the extent of

supervision or inspection required during production."

Contrary to the above, shop fabrication tickets were not complete in all respects, in that they did not address certain fabrication methods/operations and their sequencing; e.g., rolling or forming, and galvanizing.

- F. QA Manual Section 8, page 1, Revision 2, dated September 16, 1977, states in part, ". . . all purchases that are made will be made by using a written purchase order. Any verbal orders shall be confirmed in writing as soon as possible." Page 2, Revision 1, dated March 1, 1977, states in part, ". . . For Nuclear Plant and/or seismic application, physical and chemical material certifications will be supplied by vendor. All purchase orders will contain specific statements requiring certification and physical and chemical properties of materials as required"
- Section 9, page 1, Revision 1, dated March 1, 1977, states in part, ". . . The plant Quality Control Inspector shall inspect the incoming material to insure that it meets the requirements of the purchase order and that it is acceptable for its intended use"

Contrary to the above, the following conditions were identified:

1. Zack Company placed purchase order (PO) Number C-4199 with Central-West Machinery Company in November 1980, for 152 gallons of Hardcast FTA-20. This material was received and accepted.

Subsequently, a verbal order for an additional 24 gallons was placed and received in November 1980, and as of the date of this inspection, no written confirmation has been made.

2. Zack Company placed PO Number C-874 with Griffiths-McKillen Steel Company on July 5, 1979 for 3000 lbs., of 14 gage ASTM A-240 Type 304-2B stainless steel and 600 feet of $1\frac{1}{2}$ x $1\frac{1}{2}$ x $1/8$ stainless angles, ASTM A-276 Type 304 with certifications required.

The received and accepted certification, dated July 18, 1979, for the ASTM A-240 material shows the following: tensile strength - 66,000 psi; phosphorus-0.38; sulfur-0.06; and nitrogen content is not addressed. The ASTM A-240 standard requires 70,000 psi tensile strength minimum; 0.045 maximum phosphorus; 0.03 maximum sulfur; and 0.10 maximum nitrogen.

3. Zack Company placed PO Number C-4458, dated July 30, 1981, with Hobart North for 30 lbs. stainless steel weld rod, $3/32$ " Type 308. The PO stated "Actual or Typical Chemistry, RT (radiography), mechanicals, Charpy V notch tests."

The Certified Material Test Report (CMTR) was received and accepted by Zack Company, but did not address RT or Charpy V notch tests.

(NOTE: The material specification does not require RT or Charpy's).

4. Zack Company placed PO Number C-9433, dated August 4, 1976, with Vincent Brass & Aluminum Company for 4000 lbs. of 20 gage and 2000 lbs. of 22 gage stainless coils, Type 316, ASTM A-240, with mill certifications required.

The material was received with a certification dated August 9, 1976. The 20 gage material was returned to Vincent due to damage. However, the 22 gage material was accepted, although the certification did not list a heat number and did not provide the actual chemistry. The chemistry stated on the certification was simply a reiteration of the chemistry requirements stated in ASTM A-240. (NOTE: This material was ordered as nonsafety related; however, this does not negate the stated requirement).

5. Zack Company placed PO Number C-739, dated September 29, 1978, with U.S. Steel Company for 20 tons of ASTM A-527, A-525 galvanized coils. Certifications were required. The material and certifications were received and accepted, showing the heat numbers as J 74531 and J 74278.

The certification did not provide physical test reports for heat J 74531. (NOTE: The ASTM material standard does not require physical properties to be reported; however, this material was purchased for use at the Clinton Power Station site and the Clinton specification did require physical properties to be reported).

- G. Section 7.1.2 of PQCP-7, Revision 8, "Plant Document Control" states in part, "Customer approved editions/revisions to the ZQAM are controlled by the QAM. Such control to include as a minimum the following:
. . . 7.1.2.4 Establishment, by project, of a file of voided documents.
7.1.2.5 Documented distribution requiring written acknowledgment of receipt."

Section 7.2.2 of PQCP-7, Revision 8, states in part, "New or revised . . . WPS's approved by the customer, are controlled by the QAM. Such control to include as a minimum the provisions of paragraphs 7.2.1.2 through 7.1.2.5 above."

Contrary to the above, the file of voided documents did not contain Revision 0 to the ZQAM (Clinton Project) nor Revisions 1, 2, 3, and 5 of Welding Procedure WPS-1. There was no documentation to show that the QC Manager at Clinton, who is on the Controlled Copy Distribution List, received a copy of WPS-1, Revision 10 (June 1, 1981) or the ZQAM, Revision 1 (September 30, 1980).

- H. Section 19, "Audits" of the QA Manual (ZQAM-Revision 3) for LaSalle states in part, "In plant audits shall be performed a minimum of once a year by the Quality Control Department Manager"

Section 19, "Audits" of the QA Manual (ZQAM-Revision 1) for Clinton states in part, "Audits are performed in accordance with written procedures or check lists . . . Audits will be performed as follows: (1) Zack

Site-Every twelve months for all sections of the manual; (2) Plant-Every twelve months for all sections of the manual"

Section 7.0 of PQCP-17, Revision 1, "Training, Certification and Evaluation of Quality Assurance Auditors - Performance of Audits and Vendor/Supplier Surveys" states in part, ". . . 7.3 Auditors/Lead Auditors prepare a written audit plan identifying the activity and organization to be audited . . . 7.7 Audits shall be performed by use of checklists (ZQF-86)"

Contrary to the above, a review of the internal audits conducted at the Zack plant, and the LaSalle and Clinton sites from 1979 through 1981 (no audits were performed in 1982) showed that all section of the manuals were not audited on an annual basis. There was also no evidence of 10 audit plans or 3 check lists for the 17 internal audits performed.

- I. Section 18, "QA Records" of the QA Manual (ZQAM-Revision 1) states in part, "All records in the home office . . . shall be indexed, filed, and maintained in a fireproof steel cabinet . . . As a minimum, records shall include: . . . 5. Qualification of personnel"

Contrary to the above, a review of the QA record files for both the LaSalle and Clinton projects indicated that there were no personnel qualifications maintained for one shop welder and two auditors.

- J. Procedure QCP-11, Revision 6, "Training Procedures for Personnel Performing Quality Control Inspection" requires that QC inspection personnel for the LaSalle project meet visual and color vision standards, and the visual requirements be verified annually by reexamination. In addition, certification forms which will be completed for each person who performs inspections, will be retained in the project files.

Procedure PQCP-11, Revision 1, "Training, Certification, and Evaluation of Quality Control Inspectors" requires that QC inspection personnel for the Clinton project have an annual examination for visual acuity, and the results of these examinations be maintained in the files. The certification is also documented on a form which is maintained in the files. In addition, the inspectors are evaluated 30 days after certification and annually thereafter, and the evaluations are documented on a form.

Procedure PQCP-16, Revision 1, "On-going Training" requires that QC and plant fabrication personnel receive monthly training from both the Quality Control Manager and the Production Manager, and each training session is documented and retained in the QA files.

Contrary to the above, a review of the QA files for 13 QC inspectors (LaSalle), 21 QC inspectors (Clinton), and 4 welders revealed a lack

of documentation for the following items:

1. Annual Eye Exam - 15 (Clinton) and 6 (LaSalle) inspectors;
2. Certification Form - 13 (Clinton) and 1 (LaSalle) inspectors;
3. Performance Evaluation - 16 (Clinton) inspectors; and
4. On-going Training - 8 (Clinton) inspectors and 4 welders.

K. Paragraph 4.1 of "The Zack Company Procedure for Compliance with 10 CFR Part 21," Revision 0, dated December 9, 1978 states, "Any employee of the Zack Company who has reason to believe a deviation exists, is required to supply this information both verbally and in writing to his immediate supervisor. The written report shall be in accordance with the form of Appendix A (10 CFR Part 21 evaluation report). It shall be prepared within one working day of the verbal notification. The reporting and evaluation chain is shown in Figure 1."

Contrary to the above, written 10 CFR Part 21 evaluation reports had not been prepared or submitted to supervision with respect to identified deviations.

- L. Paragraph 9.1 of Sargent & Lundy Engineers, Chicago, Illinois, Standard Specification J-2590 for HVAC Duct work (Form 320) states in part, "The Contractor (Zack Company) shall be responsible for the leak tightness of each duct system. To assure minimum leakage, the Contractor shall seal all joints and seams which are not gasketed with and (sic) approved material as specified in Article 3.5 for all nonnuclear applications, and shall be in accordance with Article 3.6 for all nuclear plant systems, except HVAC systems in the service building, which can be the same as nonnuclear applications"

Contrary to the above, unapproved materials (Hardcast FTA-20 adhesive and duct tape) were used in sealing HVAC systems at LaSalle.

- M. Paragraph 7.7 of QCP-8, "NCR," Revision 4, dated October 2, 1980, requires the signature of the Project Engineer in Blank 15, of the Zack Company Nonconformance Report (Form ZQF-11) acknowledging corrective action taken.

Contrary to the above, three NCR's (622, 776, 781, LaSalle) were initialled for the Project Engineer by an unidentified second party, and one NCR (475, LaSalle) was unsigned.

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REPORT NO.: 99900785/82-01 INSPECTION DATE(S) 8/3-6/82 INSPECTION ON-SITE HOURS: 81

CORRESPONDENCE ADDRESS: The Zack Company
ATTN: Mrs. Christene Zack DeZutel
President
4600 W. 12th Place
Chicago, Illinois 60650

ORGANIZATIONAL CONTACT: Mrs. Christene Zack DeZutel
TELEPHONE NUMBER: (312) 242-3434

PRINCIPAL PRODUCT: Heating, Ventilation, and Air Conditioning Systems (HVAC).

NUCLEAR INDUSTRY ACTIVITY: Current activity consists of HVAC systems being furnished to the Commonwealth Edison Company's LaSalle County Station, Units 1 and 2; Illinois Power Company's Clinton Power Station, Unit 1; and Consumers Power Company's Midland Plant, Units 1 and 2.

ASSIGNED INSPECTOR:

L. E. Ellershaw, Reactive & Component Program Date
Section (R&CPS)

OTHER INSPECTOR(S): J. T. Conway, R&CPS
L. B. Parker, R&CPS

APPROVED BY:

I. Barnes, Chief, R&CPS Date

INSPECTION BASES AND SCOPE:

- A. BASES: Appendix B to 10 CFR Part 50.
- B. SCOPE: This inspection was conducted as a result of the receipt by the Nuclear Regulatory Commission (NRC) of allegations pertaining to implementation and enforcement of the Zack Company quality assurance program, and was performed in conjunction with an investigation by the Chicago Field Office of the NRC Office of Investigation. Investigative findings are contained in NRC Report No. 99900785/82-02. The main purposes of the inspection were to assist the (cont. on next page)

PLANT SITE APPLICABILITY:

50-373; 50-374; 50-329; 50-330; 50-461.

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SCOPE: (cont.) investigative staff in the evaluation of identified concerns, and to establish whether HVAC system manufacture was consistent with applicable codes, contractual and regulatory requirements. To make this determination, the primary areas selected for inspection were welding process control, nonconformances and corrective action, audits, indoctrination, and training, document control, QA records, procurement document control and implementation of 10 CFR Part 21.

A. VIOLATIONS:

None

B. NONCONFORMANCES:

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, QA Manual Section 10, and AWS D1.1-79, the NRC inspector observed deviations being permitted and changes to essential variables being made without the procedure being requalified during GMAW of duct rings for the Midland Plant, in which the welder was using 0.035 inch diameter weld wire, 125 amps, and a gas flow rate of 30 CFH.
2. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Procedure QCP-29, the following conditions were identified:
 - a. Electrodes (bare wire on spools) were not being protected, in that three spools of stainless steel electrodes, each of a different type, were observed under a work bench in an uncovered condition. Further, two spools had been issued on December 17, 1981 and the other on April 16, 1982.
 - b. Traceability of these electrodes would be precluded when used at a time later than the issue date, in that the date of issue as shown on the weld material control sheet would not coincide with the date of actual welding on a specific Zack Company traveler.
3. Contrary to Criterion V of Appendix B to 10 CFR Part 50, QA Manual Section 6, and AWS D1.1-79, full and complete information pertaining to welds, weld joints, and material preparation, was not shown on shop travelers/detail drawings provided to shop personnel. The only information provided is the welding procedure specification number, which does not delineate the above information.

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4. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and QA Manual Section 10, instructions, procedures, or drawings did not include appropriate qualitative acceptance criteria for welds. Therefore, without acceptance criteria being stipulated, specific inspection requirements were not set forth in welding procedures.
5. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and QA Manual Section 7, shop fabrication tickets were not complete in all respects, in that they did not address certain fabrication methods/operations and their sequencing; e.g., rolling or forming, and galvanizing.
6. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and QA Manual Section 8, the following conditions were identified:
 - a. Zack Company placed purchase order (PO) Number C-4199 with Central-West Machinery Company in November 1980, for 152 gallons of Hardcast FTA-20. This material was received and accepted.

Subsequently, a verbal order for an additional 24 gallons was placed and received in November 1980, and as of the date of this inspection, no written confirmation has been made.
 - b. Zack Company placed PO number C-874 with Griffiths-McKillen Steel Company on July 5, 1979 for 3000 lbs. of 14 gage ASTM A-240 Type 304-2B stainless steel and 600 feet of $1\frac{1}{2}$ x $1\frac{1}{2}$ x $1/8$ stainless angles, ASTM A-276 Type 304, with certifications required.

The received and accepted certification, dated July 18, 1979, for the ASTM A-240 material showed the following: tensile strength - 66,000 psi; phosphorus - 0.38; sulfur - 0.06; and nitrogen content was not addressed. The ASTM A-240 standard requires 70,000 psi tensile strength (minimum), 0.045 maximum phosphorus, 0.03 maximum sulfur, and 0.10 maximum nitrogen.
 - c. Zack Company placed PO number C-4458, dated July 30, 1981, with Hobart North for 30 lbs., stainless steel weld rod, 3/32" Type 308. The PO stated "Actual or Typical Chemistry, RT (radiography), mechanicals, Charpy V notch tests."

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The Certified Material Test Report (CMTR) was received and accepted by Zack Company, but did not address RT or Charpy V notch tests. (NOTE: The material specification does not require RT or Charpy's, however, it is still a PO requirement).

- d. Zack Company placed PO Number C-9433, dated August 4, 1976, with Vincent Brass & Aluminum Company for 4000 lbs. of 20 gage and 2000 lbs. of 22 gage stainless coils, Type 316, ASTM A-240, with mill certifications required.

The material was received with a certification dated August 9, 1976. The 20 gage material was returned to Vincent due to damage. However, the 22 gage material was accepted, although the certification did not list a heat number and did not provide the actual chemistry. The chemistry stated on the certification was simply a reiteration of the chemistry requirements stated in ASTM A-240. (NOTE: This material was ordered as nonsafety related; however, this does not negate the stated requirements).

- e. Zack Company placed PO Number C-739, dated September 29, 1978, with US Steel Company for 20 tons of ASTM A-527, A-525 galvanized coils. Certifications were required.

The material and certifications were received and accepted, showing the heat numbers as J 74531 and J 74278.

The certifications did not provide physical test reports for heat J 74531. (NOTE: The ASTM material standard does not require physical properties to be reported; however, this material was purchased for use at the Clinton Power Station site and the Clinton specification did require physical properties to be reported).

7. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph 9.1 of Sargent & Lundy Engineers, Chicago, Illinois, Standard Specification J 2590 for HVAC duct work (Form 320), unapproved materials (Hardcast FTA-20 adhesive and duct tape) were used in sealing HVAC systems at LaSalle.
8. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and PQCP-7, "Plant Document Control," there was no documented evidence that a voided document file was maintained up-to-date for the QA Manual for Clinton and welding procedure WPS-1.

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9. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 19, "Audits," of the QA Manuals for LaSalle and Clinton, and PQCP-17, "Training, Certification and Evaluation of Quality Assurance Auditors - Performance of Audits and Vendor/Supplier Surveys," a review of internal audits conducted from 1979 through 1981 showed all sections of the QA manuals were not audited on an annual basis, and 10 audit plan and 3 check lists were missing for the 17 internal audits performed.
10. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and Section 18, "QA Records" of the QA Manuals for LaSalle and Clinton, a review of the QA records files for both the LaSalle and Clinton projects indicated that there were no personnel qualifications maintained for one shop welder and two auditors.
11. Contrary to Criterion V of Appendix B to 10 CFR Part 50; QCP-11, "Training Procedures for Personnel performing Quality Control Inspection;" PQCP-11, "Training, Certification, and Evaluation of Quality Control Inspectors;" and PQCP-16 "On-going Training," a review of the QA files for 13 QC inspectors (LaSalle), 21 QC inspectors (Clinton), and 4 welders revealed a lack of documentation for the following items:
 - a. Annual eye exam - 14 (Clinton) and 6 (LaSalle) inspectors;
 - b. Certification Form - 13 (Clinton) and 1 (LaSalle) inspectors;
 - c. Performance Evaluation - 16 (Clinton) inspectors; and
 - d. On-going Training - 8 (Clinton) inspectors and 4 welders.
12. Contrary to Criterion V of Appendix B to 10 CFR Part 50, and paragraph 4.1 of "The Zack Company Procedure for Compliance with 10 CFR Part 21," written 10 CFR Part 21 evaluation reports had not been prepared or submitted to supervision with respect to identified deviations.
13. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph 7.7 of QCP-8, three NCR's (LaSalle) were initialled for the Project Engineer by an unidentified second party and one NCR (LaSalle) was unsigned.

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C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

1. Review of Allegation Background

This inspection was conducted at the request of the NRC Region III Office, and in conjunction with an investigation into allegations received from former Zack Company employees, pertaining to falsified/alterd quality assurance documentation; namely, material certifications.

The alleger first contacted NRC Region III, in person, on May 3, 1982, and subsequently by telephone on May 10, 1982, and again, in person, on May 19, 1982. The allegations, briefly, dealt with possible forged signatures, use of white-out to effect changes in reported results, and the adding of information to material certifications which had been received from material suppliers/manufacturers.

The Zack Company had identified these conditions in letters to their customers on the following dates: (1) Bechtel Power Corporation-Midland Plant, Units 1 and 2, August 28, 1981; (2) Baldwin Associates-Clinton Power Station, Unit 1, September 25, 1981; and (3) Commonwealth Edison Company-LaSalle County Station, Unit 1 and 2, September 25, 1981.

The Zack Company was performing a review of all purchase order files, including certifications, and was taking action to rectify all discovered discrepancies. One of the actions taken was to establish a formal documentation control system. In order to implement the system, additional personnel were required. A file clerk and a document control supervisor were hired on October 5, 1981, and October 19, 1981, respectively.

In addition to establishing and implementing the document control system, the document control supervisor was responsible for conducting the review and evaluation of all the purchase order files. Subsequent letters (status reports) to the customers, from the document control supervisor, reflected that corrected certifications were being received and very few discrepancies remained.

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The file clerk was laid off and the supervisor terminated on April 30, 1982. Both of these people were involved with the allegations.

NRC Report No. 99900785/82-02 addresses the specific findings relative to the allegations.

2. Areas Inspected

- a. Welding Process Control - The NRC inspector reviewed the welding material control system including the issuance, documentation (weld material test reports), retrieval, and storage of welding materials. The applicable welding procedure specifications, their procedure qualification records, and shop drawings/travelers were reviewed. In-process gas metal arc welding was observed being performed on duct rings being supplied to the Midland Plant. As a result of this observation and review, nonconformances B.1, B.2, B.3, and B.4 were identified. Additionally, nonconformance E.5 was identified, although not a specific part of this area of the inspection.
- b. Procurement Document Control - A total of 94 procurement document files were reviewed. These files consisted of Zack Company purchase orders and supplements, shipping documentation, material test reports, certificates of conformance, applicable correspondence, receiving inspection reports, and copies of nonconformance reports (if required). As a result of this review, nonconformance B.6 was identified. Further, review of Sargent & Lundy Engineers (S&L) Standard Specification No. J 259C and S&L's approved material list resulted in nonconformance B.7 being identified.

The NRC inspector expressed concern over the apparent failure of the receiving inspection function to detect the discrepancies/anomalies between the purchase order requirements and the material certifications.

- c. Document Control - A review of the master file for the QA Manuals and quality control and welding procedures, as well as the file on voided documents for the Clinton and LaSalle projects, resulted in the identification of nonconformance B.8.
- d. Audits - A review of reports for 17 internal audits conducted at the Zack, LaSalle, and Clinton sites from 1979 through 1981 and a review of 10 vendor/supplier audit reports conducted from October 1981 through May 1982, resulted in the identification of nonconformance B.9.

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- e. QA Records - A review of the QA record file for 13 QC inspectors at LaSalle, 21 QC inspectors at Clinton, 4 welders, and 5 auditors resulted in the identification of nonconformances B.10 and B.11,

A detailed evaluation of the QA program for both the LaSalle and Clinton projects, to determine if activities were being implemented consistent with quality commitments contained in both QA Manuals, and discussions with Zack personnel resulted in the following additional comments:

The QA Manuals and applicable procedures for both the LaSalle and Clinton projects appear to require updating to satisfy the requirements of Appendix B to 10 CFR Part 50. Examples of observed discrepancies are as follows:

- (1) The organization chart does not identify all the onsite and offsite groups which function under the cognizance of the QA program, and the QA responsibilities of each group are not described;
- (2) The organizational positions with stop work authority and the individual responsible for directing and managing the site QA program are not identified;
- (3) Indoctrination, training, and qualification programs are not documented;
- (4) Qualifications and certifications of inspectors and auditors are not being kept current;
- (5) The basis for selection of suppliers is not being documented and filed;
- (6) There was no documentation to indicate that supplier's certificates of conformance are periodically evaluated by audits, independent inspections, or tests, to assure they are valid;
- (7) There were no requirements for in-process inspection of work by individuals other than those who performed or directly supervised the activity;
- (8) Qualification records of procedures, equipment and personnel associated with special processes (e.g., welding) had not been fully established, filed and kept current; and

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- (9) There was no requirement for management (above or outside the QA organization) to regularly assess the scope, status and compliance of the QA program to 10 CFR Part 50, Appendix B.
- f. Implementation of 10 CFR Part 21 - The NRC inspector reviewed the vendor's procedure "The Zack Company's Procedure for Compliance with 10 CFR Part 21," Revision 0, dated December 19, 1978, to verify that adequate documented measures were available to meet the reporting requirements of 10 CFR Part 21. The evaluation requirements were not followed (see nonconformance E.12). Two reports were examined for completeness and adherence to notification requirements. These reports were: (1) a 10 CFR Part 21 report to NRC Region III on June 9, 1982, concerning fire dampers; and (2) a potential 10 CFR Part 21 report to NRC Region III on August 2, 1982, concerning weld records. These reports met the requirements of the vendor's procedure.

Observations of the employee's bulletin board verified that the above vendor's procedure and Section 206 of the Energy Reorganization Act of 1974, were properly posted.

- g. Nonconformances and Corrective Action - The NRC inspector reviewed the following vendor's procedure and two quality assurance manual sections to determine the QA/QC requirements for the subject area at the LaSalle site: Quality Control Procedure 8, Revision 4, dated October 2, 1980, "NCR"; Section 16 of the Quality Assurance Manual (QAM), Revision 2, dated April 1, 1981, "Nonconforming Material, Parts or Components"; Section 17 of the QAM, Revision 2, dated September 16, 1977, "Corrective Action." Three books of completed NCR's (300) were reviewed in the process of determining specific NCR's to be examined. Thirty-five specific NCR's and 20 Corrective Action Reports were examined for completeness and compliance with the above requirements. Management review of NCR corrective action was lacking on four of the NCR's examined. (See nonconformance B.13).

DRAFT

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

Distribution:
Document Control
NRC PDR
L PDR
NSIC
PRC System
LB#4 Rdg
MDuncan
DHood
OELD
ACRS (16)
ELJordan, IE
JITaylor, IE

Dear Mr. Cook:

Subject: Caseload Forecast Panel Estimate of Construction Completion Schedule

On April 19-21, 1983, the NRC Caseload Forecast Panel visited the Midland Plant to evaluate construction completion schedules. The meeting discussed in detail the basis for Consumer's revised estimates of October 1984 (Unit 2) and February 1985 (Unit 1). On April 20, 1983 the Panel conducted an extensive tour of both units to observe construction progress. The Panel has now completed its own evaluation of construction completion schedules for Midland Plant, Units 1 & 2.

The Panel concludes that some months beyond the second quarter of 1986 is the earliest date that completion of Unit 2 can reasonably be expected. Unit 1 is expected to be completed about 6 to 9 months thereafter. The critical pathway involves reinspection and rework of pipe supports, followed by execution of preoperational and acceptance testing.

The Panel believes that Consumer's estimate of 14 months to complete preoperational and acceptance testing for both units is unduly optimistic. The record for a recent single unit to date has been about 24 months. Using a more realistic, but slightly optimistic, duration for two units and Consumer's present status results in a completion date in the second quarter of 1986. However, the Panel also believes that Consumer's forecast does not realistically account for large uncertainties in the work which must precede start of critical path testing, and that this can be expected to add some months to Consumer's schedule. The Panel believes that completion of reinspections of large and small bore pipe hangers and the amount of rework resulting from this effort is a notable example of the items expected to delay start of critical path testing by some months.

OFFICE							
SURNAME							
DATE							

OFFICIAL RECORD COPY

The Panel's estimate includes no provision for delay associated with future plant financing.

Sincerely,

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

cc: See next page

DRAFT

*J. Harrison &
R. Madson
answered by
phone DS 5/25/83*

OFFICE	LB#4 <i>DSH</i>	LB#4	RM <i>W.L.</i>	RIII	AD/L		
SIGN/ML	DHood:ms	EAdensam	W Lovelace	JHarrison	TMNovak		
DATE	5/25/83	5/ /83	5/25/83	5/25/83	5/ /83		

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5-16 '82
KBL

During a discussion during the public meeting on August 5, 1982 in Midland, I was asked by Mr. Paton to jot down the story of the deep Q duct bank excavation. Here it is.

When Darl Hood and Joe Kane were in Midland for the ACRS hearing, I asked for a meeting to be held on site between NRR, Bechtel, the licensee and myself. The meeting took place on a Thursday afternoon in the Remedial Soils Trailer (May 20, 1982). The purpose of the meeting was to discuss numerous concerns that I had about ongoing work and future work.

One of the concerns discussed was a monitoring pit for what has come to be known as the deep Q duct bank. During that meeting both Joe and I expressed our concerns that what the licensee was planning was not approved, that is: to excavate below the duct bank. Joe only approved an excavation down to a duct bank approximately 22 feet deep. This is documented in Tedesco to Cook letter dated February 12, 1982, which references a Mooney to Denton letter dated January 6, 1982.

Since the licensee usually doesn't know what's in the ground, where it's at, as usual the 22 foot duct bank was approximately found at 35 feet. It also wasn't in the right location as evidenced by the sheet piling hitting one side of the duct. In addition, while drilling the dewatering well, they inadvertently drilled through the duct bank, emptying the drilling fluid into the turbine building.

I had no problem with the licensee taking the excavation pit down to 35 feet instead of the approved 22 feet, since the methodology of the approved hole remained the same. Joe and I did have a problem with them wanting to excavate below the duct bank down to impervious clay to seal off the water flow without first informing NRR of their plans.

All of this was discussed during the meeting and the licensee was told that they could not excavate below the deep Q duct bank. The licensee indicated that they would submit something formal to Joe for approval.

The following day, I reiterated this during the normal exit meeting and again during the summary at the end of that meeting. I asked if everyone understood what I was saying and they acknowledged.

The following week, during my inspection to allow the licensee to activate the freeze-wall, I told them ^{in order} that they could not dig below the deep Q duct bank.

Subsequently, after the activation of the freeze-wall, the licensee decided that they had to seal off the water flow beneath the duct bank and proceeded to dig below the duct bank without any NRC approval. I'm not sure when excavation began, but I was on site July 28 when I discovered the excavation in progress. The license, when informed of my concern, issued a Stop Work Order on July 29, 1982. I wondered why they were so agreeable until I found out that

they already had the excavation down to where they wanted it (the clay).

I informed the licensee during my exit on July 30 that they were in direct violation of the Board Order and their Construction Permit. To make matters worse, the licensee during the exit said that they discussed this with Mr. Hood and Kane in Ann Arbor earlier that morning and had gotten "approval" for what they're doing. I informed the licensee that they missed the point (basis of concern). My concern dealt not with the adequacy of what they were doing, but rather with their requirement to notify and receive prior approval before proceeding below the duct bank. Subsequently, Mr. Kane indicated to me that they never even talked to him about this, ~~and~~ Mr. Hood indicated that they talked to him about something concerning the deep Q duct bank, but he in no way had given approval.

They appeared to wait for me to leave the site, when they began another unapproved fire protection line excavation in Q dirt which was discovered by me on August 4, my next inspection. This excavation is along side the SWPS. I have not had time to look into it to better define the details, but as pointed out to you and Darl, they have undermined a duct bank and an unidentified pipe thrust block and appear to be along side a safety-related duct bank.

In summary, the licensee's attitude appears to be: their construction schedule comes first, by the time the NRC finds out about it, we'll be done with what we want and argue about whether we had approval later.