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CONSUMERS POWER COMPANY
212 WEST MICHIGAN AVENUE
JACKSON, MICHIGAN
7-15-83 10:42 AM

THE FOLLOWING IS FOR YOUR INFORMATION.

JACKSON, MICH, JULY 15, 1983--CONSUMERS POWER COMPANY WILL CONTINUE CONSTRUCTION OF ITS NUCLEAR PLANT IN MIDLAND, JAMES B FALAHEE, VICE CHAIRMAN OF CONSUMERS POWER, ANNOUNCED TODAY.

"THIS IS THE ONLY PRUDENT STEP FOR US TO TAKE," FALAHEE SAID. "THE ELECTRICITY THAT WILL BE PRODUCED BY THAT PLANT WILL BE NEEDED BY MICHIGAN CUSTOMERS IN THE FUTURE." THE MIDLAND PLANT, HE SAID, WILL BE A VALUABLE ASSET TO THE STATE OF MICHIGAN.

THE PLANT IS 83 PERCENT COMPLETE.

ON THURSDAY, CONSUMERS POWER COMPANY WAS NOTIFIED BY THE DOW CHEMICAL COMPANY THAT IT HAD TERMINATED THE AGREEMENT TO PURCHASE ENERGY FROM THE MIDLAND PLANT.

FALAHEE ISSUED A GENERAL DENIAL TO ALLEGATIONS FILED BY DOW CHEMICAL COMPANY IN THE COUNTY OF MIDLAND CIRCUIT COURT CONCERNING CONSTRUCTION PROBLEMS AT THE PLANT. "NOW, THOUGH, IS NOT THE TIME TO MAKE ALLEGATIONS OR COUNTER ALLEGATIONS," FALAHEE SAID.

RATHER, HE SAID, CONSUMERS POWER WILL ASSESS THE ENTIRE SITUATION AND MAKE COMMENTS IN THE FUTURE THROUGH LEGAL PROCEDURES.

"THE SUPPLY OF STEAM FOR DOW WAS JUST A PORTION OF OUR MIDLAND

SEE REVERSE SIDE FOR WESTERN UNION'S TOLL - FREE PHONE NUMBERS

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CONSTRUCTION. THE MORE IMPORTANT PORTION, OUR MISSION, IS TO PROVIDE RELIABLE, LOW-COST ELECTRICITY FOR OUR 1.3 MILLION CUSTOMERS. WE INTEND TO CONTINUE FULFILLING THAT MISSION. MIDLAND WILL PLAY A MAJOR ROLE IN THE ENERGY FUTURE OF THIS STATE," FALAHEE SAID.

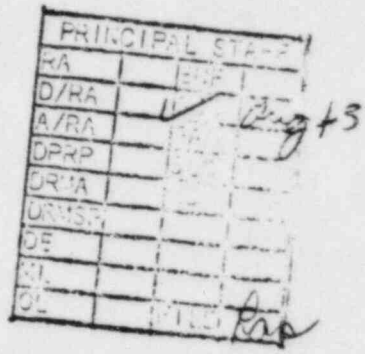
R J FITZPATRICK
END TU MB

09:51 EST

MGMCOMP

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

July 29, 1983



Docket Nos: 50-329 OM, OL
and 50-330 OM, OL

MEMORANDUM FOR: The Atomic Safety and Licensing Board for the Midland Plant, Units 1 and 2

FROM: Thomas M. Novak, Assistant Director for Licensing, Division of Licensing

SUBJECT: BOARD NOTIFICATION - NEW INFORMATION RELATING TO SOILS REMEDIAL WORK, WELDING AND THE DOW CONTRACT (BN 83-106)

This information is provided in accordance with the present NRC procedures regarding Board Notification.

The following information deals with new developments in various aspects of the Midland project. Portions of the notification may be relevant to the Midland OM/OL proceedings in areas of soils remedial work, HVAC systems, Quality Assurance and the Dow Chemical legal proceedings.

Any additional information relevant to these issues will be provided in a future Board Notification.

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

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AUG 0 8 1983

~~8306270424~~

DISTRIBUTION LIST FOR BOARD NOTIFICATION

Midland Units 1&2,
Docket Nos. 50-329/330

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MIDLAND (For BNs)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

JUL 21 1983

MEMORANDUM FOR: D. G. Eisenhut, Director, Division of Licensing, NRR

FROM: R. F. Warnick, Director, Office of Special Cases

SUBJECT: RECOMMENDATION FOR NOTIFICATION OF LICENSING BOARD

In accordance with present NRC procedures regarding Board Notifications, the following information is being provided as constituting new information, some of which is relevant and material to the Midland OM/OL proceedings.

A. This information deals with the licensee's July 11, 1983, decision to stop all Service Water Pump Structure (SWPS) related dewatering well drilling. The pertinent facts that relate to the stop work are as follows:

1. On July 9, 1983, Bechtel Construction stopped drilling on well #521 when an obstruction was encountered at approximate elevation 619.5 feet. The licensee thought that the obstruction was most likely bedding material for a non-Q prestressed concrete pipe connecting the service water system to the cooling tower.

2. On July 9, 1983, Bechtel Construction stopped drilling on piezometer #LS-7 when an obstruction was encountered at approximate elevation 614.5 feet. The licensee thought that the obstruction was most likely the mud mat from an electrical duct-bank.

3. On July 11, 1983, the NRC was informed of these two incidents by a conference call from the licensee. Midland Project Quality Assurance Department (MPQAD) decided to issue a formal stop work on all SWPS drilling after these discussions.

At the current time all drilling around the SWPS remains stopped pending the licensee's completion of their corrective action to preclude recurrence. The events and the licensee's corrective actions are described in the attached letter from Mooney to Harrison, dated July 15, 1983.

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B. There appears to be a continuing lack of attention to detail in the implementation of the remedial soil/underpinning programs. This is illustrated by the latest Stone and Webster weekly report No. 41, which is attached. The report indicates problems such as untimely resolution of outstanding NCR's, not meeting the intent of design drawings by extending the slope layback under the electrical penetration area (EPA), and not keeping the number of attached changes to a design drawing within workable limits.

On July 13, 1983, the Region III staff performed an inspection of the matters described in paragraphs A. and B. above and questioned why soils work should continue. The licensee's response, dated July 15, 1983, to these questions is attached.

On July 20, 1983, subsequent to the licensee response, the NRC was informed that well #521 had indeed been drilled through the concrete pipe and not into the bedding material as originally thought.

C. On June 29, 1983, following a review by the Senior Resident Inspector of welding procedures and observation of welding performance demonstrations, the NRC authorized the resumption of safety-related welding work on the Heating, Ventilation, and Air Conditioning systems. The work was initially stopped November 30, 1982, after a licensee audit determined that the quality assurance program for welder qualification and welding procedure qualifications was inadequate. A copy of our authorization letter is attached.

D. Although this is not a safety concern, the following information is provided to keep the Board informed. The lead welding engineer for remedial soils work allegedly instructed a welding rod room attendant to change the rod return time on a number of weld rod withdrawal slips to conform to site requirements. Bechtel, when learning of the alleged falsification, investigated, and fired the engineer on June 29, 1983.

The inspectors determined there was no safety significance to this incident. The welding rods, even though outside the heating ovens for an extended period, were kept by workmen in small portable warming ovens. In addition, the rods were used in the welding of structu considered temporary.

E. Consumers Power Company informed Region III that Dow Chemical Company is attempting to terminate its contract with Consumers Power Company to supply process steam to Dow's Midland facility from the Midland Nuclear Power Station. On July 14, 1983, Dow announced it was filing suit seeking a court judgment that all Dow's obligations under the contract be cancelled "because of CPCo's misrepresentations and

non-disclosures . . . and CPCo's inability to complete the Midland Nuclear Plant within any reasonable time and at a reasonable cost." CPCo notified the region that they planned to formally notify the Board in the near future.

If you have any questions or desire further information regarding this matter please call me.

for F Warnick

R. F. Warnick, Director
Office of Special Cases

Attachments: As stated

cc w/o attachments:
A. B. Davis
J. J. Harrison
R. N. Gardner
R. B. Landsman
R. J. Cook
B. L. Burgess

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

October 18, 1979

MEMORANDUM FOR:

R. C. Knop	R. Cook
D. W. Hayes	T. Vandel
D. H. Danielson	F. Jablonski
K. Naidu	E. Lee
G. Maxwell	G. Gallagher
W. Hansen	K. Ward
P. Barrett	I. Yin

FROM: G. Fiorelli, Chief, Reactor Construction and Engineering Support Branch

SUBJECT: MIDLAND CONSTRUCTION STATUS REPORT AS OF OCTOBER 1, 1979

The attached report was finalized based on your feedback requested in my memo of October 5, 1979. If you still feel adjustments are necessary please contact me. If you consider the report characterizes your current assessment of the Midland project, please concur and pass it along promptly.

G. Fiorelli, Chief
Reactor Construction and
Engineering Support Branch

Enclosure: As stated

cc: J. G. Keppler

8405230075

MIDLAND SUMMARY REPORT UPDATE

Facility Data

Docket Number	- 50-329 and 50-330
Construction Permits	- CPPR-81 and CPPR-82
Permits Issued	- December 14, 1972
Type Reactor	- PWR; Unit 1, 492 MWe*; Unit 2, 818 MWe
NSSS	- Babcock and Wilcox
Design/Constructor	- Bechtel Power Corporation
Fuel Load Dates	- Unit 1, 4/82; Unit 2, 11/81
Status of Construction	- Unit 1, 54%; Unit 2, 61%; Engineering 82%

*Approximately one-half the steam production for Unit 1 is dedicated, by contract, to be supplied to Dow Chemical Corporation, through appropriate isolation heat exchangers.

Chronological Listing of Major Events

July 1970	Start of construction under exemption
9/29-30 & 10/1/70	Site inspection, four items of noncompliance identified, extensive review during CP hearings
1971 - 1972	Plant in mothballs pending CP
12/14/72	CP issued
9/73	Inspection at Bechtel Ann Arbor offices, five items of noncompliance identified
11/73	Inspection at site, four items of noncompliance identified (cadweld problem) precipitated the Show Cause Order
12/29/73	Licensee answers Show Cause Order commits to improvements on QA program and QA/QC staff
12/3/73	Show Cause Order issued suspending cadwelding operation
12/6-7/73	Special inspection conducted by RIII and HQ personnel
12/17/73	Show Cause Order modified to allow cadwelding based on inspection findings of 12/6-7/73

12/5/75	CP reported that rebar spacing out of specification 50 locations in Unit 2 containment
3/5 & 10/75	CP reported that 63 f6 rebar were either missing or misplaced in Auxiliary Building
3/12/75	RIII held management meeting with CP

8/21/75	CP reported that 42 sets of #6 tie bars were missing in Auxiliary Building
3/22/76	CP reported that 32 #8 rebar were omitted in Auxiliary Building. A stop-work order was issued by CP
3/26/76	RIII inspector requested CP to inform RIII when stop-work order to be lifted and to investigate the cause and the extent of the problem. Additional rebar problems identified during site inspection by NRC
3/31/76	CP lifted the stop-work order
4/19 thru 5/14/76	RIII performed in-depth QA inspection at Midland
5/14/76	RIII management discussed inspection findings with site personnel
5/20/76	RIII management meeting with CP President, Vice President, and others.
6/7 & 8/76	RIII follow up meeting with CP management and discussed the CP 21 correction commitments
6/1-7/1/76	Overall rebar omission reviewed by R. E. Shewmaker
7/28/76	CP stops concrete placement work when further rebar placement errors found by their overview program. PN-III-76-52 issued by RIII
8/2/76	RIII recommends HQ notice of violation be issued
8/9 - 9/9/76	Five week full-time RIII inspection conducted
8/13/76	Notice issued
10/29/76	CP responded to HQ Notice of Violations
12/10/76	CP revised Midland QA program accepted by NRR
2/28/77	Unit 2 bulge of containment liner discovered by licensee
4/19/77	Tendon sheath omissions of Unit 1 reported
4/29/77	IAL issued relative to tendon sheath placement errors
5/5/77	Management meeting at CP Corporate Office relative to IAL regarding tendon sheath problem

5/24/77	Special inspection by RIII, RI and HQ personnel to determine adequacy of QA program implementation at Midland site.
6/75 - 7/77	Series of meetings and letters between CP and NRR on applicability of Regulatory Guides to Midland. Commitments by CP to the guides was responsive.
7/24/78	Construction resident inspection assigned.
8/21/78	Measurements by Bechtel indicate excessive settlement of Diesel Generator Building. Officially reported to RIII on September 7, 1978.
12/78 - 1/79	Special investigation/inspection conducted at Midland sites, Bechtel Ann Arbor Engineering offices and at CP corporate offices relative to Midland plant fill and Diesel Generator building settlement problem.
2/7/79	Corporate meeting between RIII and CPC to discuss project status and future inspection activities. CPC informed construction performance on track with exception of diesel/fill problem.
2/23/79	Meeting held in RIII with Consumers Power to discuss diesel generator building and plant area fill problems.
3/5/79	Meeting held with CPC to discuss diesel generator building and plant area fill problems.
3/21/79	10 CFR 50.54 request for information regarding plant fill sent to CPC by NRR.
5/5/79	Congressman Albosta and aides visited Miuland site to discuss TMI effect on Midland.
5/8-11/79	Mid-QA inspection conducted.

Significant Major Events

Past Problems

1. Cadweld Splicing Problem and Show Cause Order

A routine inspection, conducted on November 6-8, 1973, as a result of intervenor information, identified eleven examples of four noncompliance items relative to rebar Cadwelding operations. These items were summarized as: (1) untrained Cadweld inspectors; (2) rejectable Cadwelds accepted by QC inspectors; (3) records inadequate to establish cadwelds met requirements; and (4) inadequate procedures.

As a result, the licensee stopped work on cadweld operations on November 9, 1973 which in turn stopped rebar installation and concrete placement work. The licensee agreed not to resume work until the NRC reviewed and accepted their corrective action. However, Show Cause Order was issued on December 3, 1973, suspending Cadwelding operations. On December 6-7, 1973, RIII and HQ personnel conducted a special inspection and determined that construction activity could be resumed in a manner consistent with quality criteria. The Show Cause Order was modified on December 17, 1973, allowing resumption of Cadwelding operations based on the inspection results.

The licensee answered the Show Cause Order on December 29, 1973, committing to revise and improve the QA manuals and procedures and make QA/QC personnel changes.

Prehearing conferences were held on March 28 and May 30, 1974, and the hearing began on July 16, 1974. On September 25, 1974, the Hearing Board found that the licensee was implementing its QA program in compliance with regulations and that construction should not be stopped.

2. Rebar Omission/Placements Errors Leading to IAL

Initial identification and report of rebar nonconformances occurred during an NRC inspection conducted on December 11-13, 1974. The licensee informed the inspector that an audit, had identified rebar spacing problems at elevations 642' - 7" to 652' - 9" of Unit 2 containment. This item was subsequently reported per 10 CFR 50.55(e) and was identified as a item of noncompliance in reports Nos. 50-329/74-11 and 50-330/74-11.

Additional rebar deviations and omissions were identified in March and August 1975 and in April, May and June 1976. Inspection report Nos. 50-329/76-04 and 50-330/76-04 identified five noncompliance items regarding reinforcement steel deficiencies.

Licensee response dated June 18, 1976, listed 21 separate items (commitments) for corrective action. A June 24, 1976 letter provided a plan of action schedule for implementing the 21 items. The licensee suspended concrete placement work until the items addressed in licensee's June 24 letter were resolved or implemented. This commitment was documented in a RIII letter to the licensee dated June 25, 1976. Although not stamped as an IAL, in-house memos referred to it as such.

Rebar installation and concrete placement activities were satisfactorily resumed in early July 1976, following completion of the items and verification by RIII.

Additional action taken is as follows:

a. By the NRC

(1) Assignment of an inspector full-time onsite for five weeks to observe civil work in progress.

(2) IE management meetings with the licensee at their corporate offices

(3) Inspection and evaluation by Headquarters personnel

b. By the Licensee

(1) June 18, 1976 letter committing to 21 items of corrective action.

(2) Establishment of an overview inspection program to provide 100% reinspection of embedments by the licensee following acceptance by the contractor QC personnel.

c. By the Contractor

(1) Personnel changes and retraining of personnel.

(2) Prepared technical evaluation for acceptability of each identified construction deficiency.

(3) Improvement in their QA/QC program coverage of civil work (this was imposed by the licensee).

3. Tendon Sheath Placement Errors and Resulting Immediate Action Letter (IAL)

On April 19, 1977, the licensee reported, as a Part 50, Section 50.55(e) item, the inadvertent omission of two hoop tendon sheaths

from a Unit 1 containment concrete placement at elevation 703' - 7" due to having already poured concrete in an area where the tendons were to be directed under a steam line. The tendons were subsequently rerouted in the next higher concrete lift.

An IAL was issued to the licensee on April 29, 1977, which spelled out six licensee commitments for correction which included: (1) repairs and cause corrective action; (2) expansion of the licensee's QC overview program; (3) revisions to procedures and training of construction and inspection personnel.

A special QA program inspection was conducted in early May 1977. The inspection team was made up of personnel from RI, RIII and HQ. Although five items of noncompliance were identified, it was the concensus of the inspectors that the licensee's program was an acceptable program.

The licensee issued it's final report on August 12, 1977. Final review onsite was conducted and documented in report No. 50-329/77-08.

Current Problems

1. The licensee informed the RIII office on September 8, 1978, per requirements of 10 CFR 50.55(e) that settlement of the diesel generator foundations and structures were greater than expected.

   Fill material in this area was placed between 1975 and 1977, with construction starting on the diesel generator building in mid-1977. Review of the results of the RIII investigation/inspection into the plant fill/Diesel Generator Building settlement problem indicate many events occurred between late 1973 and early 1978 which should have alerted Bechtel and the licensee to the pending problem. These events included nonconformance reports, audit findings, field memos to engineering and problems with the administration building fill which caused modification and replacement of the already poured footing and replacement of the fill material with lean concrete.

   Causes of the excessive settlement include: (1) inadequate placement method - unqualified compaction equipment and excessive lift thickness; (2) inadequate testing of the soil material; (3) inadequate QC inspection procedures; (4) unqualified quality control inspectors and field engineers; (5) over reliance on inadequate test results.

The proposed remedial work and corrective action are as follows:

(1) Diesel Generator Building - apply surcharge load in and around building to preconsolidate the foundation material. Continue to monitor soil response to predict long-term settlement.

(2) Service Water Pump Structure - Install piles to hard glacial till to support that portion of the structure founded on plant fill material.

(3) Tank Farm - Fill has been determined to be suitable for the support of Borated Water Storage Tanks. Tanks are to be constructed and hydro tested while monitoring soil response to confirm support of structures.

(4) Diesel Oil Tanks - No remedial measure; backfill is considered adequate.

(5) Underground Facilities - No remedial work is anticipated with regards to buried piping.

(6) Auxiliary Building and F. W. Isolation Valve Pits - Installed a number of caissons to glacial till material and replace soil material with concrete material under valve pits.

(7) Dewatering System - Installed site dewatering system to provide assurance against soil liquidification during a seismic even

The above remedial measures were proposed to the NRC staff on July 18, 1979. No endorsement of the proposed actions have been issued to the licensee to date. The licensee is proceeding with the above plans.

The NRC activities, to date, include:

a. Lead technical responsibility and program review was transferred to NRR from IE by memo dated November 17, 1978.

b. Site meeting on December 3-4, 1978, between NRR, IE, Consumers Power and Bechtel to discuss the plant fill problem and proposed corrective action related to the Diesel Generator Building settlement.

c. RIII conducted an investigation/inspection relative to the plant fill and Diesel Generator Building settlement. Findings are contained in Report 50-329/78-20; 330/78-20 dated March 1979.

d. NRC/Consumers Power Company/Bechtel meetings held in RIII office to discuss finding of investigation/inspection of site settlement (February 23, 1979 and March 5, 1979).

e. NRC issue of 10 CFR 50.54(f) regarding plant fill dated March 21, 1979.

f. Several inspections of Midland site settlement have been performed.

The Constructor/Designer activities include:

a. Issued NCR-1482 (August 21, 1978)

b. Issued Management Corrective Action Report (MCAR) No. 24 (September 7, 1978)

c. Prepared a proposed corrective action option regarding placement of sand overburden surcharge to accelerate and achieve proper compaction of diesel generator building sub-soils.

d. Issued 10 CFR 50.55(e) interim report number 1 dated September 29, 1978.

e. Issued interim report No. 2 dated November 7, 1978.

f. Issued interim report No. 3 dated June 5, 1979.

g. Issued interim report No. 4 dated February 23, 1979

h. Issued interim report No. 5 dated April 30, 1979

i. Responded to NRC 10 CFR 50.54(f) request for information onsite settlement dated April 24, 1979. Subsequent revision 1 dated May 31, 1979, revision 2 dated July 9, 1979 and revision 3 dated September 13, 1979.

j. Meeting with NRC to discuss site settlement causes and proposed resolution and corrective action taken dated July 18, 1979. Information discussed at this meeting is documented in letter from CPCo to NRC dated August 10, 1979.

k. Issued interim report No. 6 dated August 10, 1979

l. Issued interim report No. 7 dated September 5, 1979

2. Review of Quality Documentation to Establish Acceptability of Equipment

The adequacy of engineering evaluation of quality documentation (test reports, etc.) to determine if the documentation establishes that the equipment meets specification and environmental requirements is of concern. The licensee, on November 13, 1978, issued a construction deficiency report (10 CFR 50.55(e)) relative to this matter. An interim report dated November 18, 1978 was received

and stated Consumers Power was pursuing this matter not only for Bechtel procured equipment but also for NSS supplied equipment.

3. Source Inspection to Confirm Conformance to Specifications

The adequacy of equipment acceptance inspection by Bechtel shop inspectors has been the subject of several noncompliance/nonconformance repor Consumers Power has put heavy reliance on the creditability of the Bechtel vendor inspection program to insure that only quality equipment has been sent to the site. However, the referenced nonconformance reports raise questions that the Bechtel vendor inspection program may not be effectively working in all disciplines for supplied equipment. Some significant examples are as follows:

(1) Decay heat removal pump being received with inadequate radiography. The pumps were returned to the vendor for re-radiography and repair. The pumps were returned to the site with one pump assembled backwards. This pump was again shipped to the vendor for reassembly. CPCo witnessed a portion of this reassembly and noted in their audit that some questionable techniques for establishing reference geometry were employed by the vendor. The pumps had been shop inspected by Bechtel.

(2) Containment personnel air lock hatches were received and installed with vendor supplied structural weld geometry which does not agree with manufacturing drawings. The personnel air lock doors had been vendor inspected.

(3) Containment electrical penetrations were received and installed with approximately 25% of the vendor installed terminations showing blatant signs of inadequate crimping. These penetrations were shop inspected by 3 or 4 Bechtel supplier quality representatives (vendor inspectors).

(4) 350 MCM, 3 phase power cable was received and installed in some safety related circuits with water being emitted from one phase.

(5) A primary coolant pump casing was received and installed without all the threads in one casing stud hole being intact. The casings were vendor inspected by both Bechtel and B&W.

Additional IE inspections will be conducted to determine if CP has thoroughly completed an overview of the Bechtel shop inspector's function and that equipment already purchased has been reviewed to confirm it meets requirements.

4. "Q" List Equipment

There have been instances wherein safety related construction components and their installation activities have not been identified on the "Q" list.

This shortcoming could have affected the quality of work performed during fabrication due to the absence of quality controls identified with "Q" list items. Examples of non-"Q" list activities identified which should be "Q" listed include:

Cable Trays
Components of Heating and Ventilation System

The licensee will be advised to review past as well as future construction activities to confirm that they were properly defined as "Q" list work or components.

5. Management Controls

a. Throughout the construction period CPCo has identified some of the problems that have occurred and reported them under the requirements of 10 CFR 50.55(e). Management has demonstrated an openness by promptly identifying these problems. However, CPCo has on repeated occasions not reviewed problems to the depth required for full and timely resolution. Examples are:

Rebar omissions (1974)
Tendon sheath location error (1977)
Diesel generator building settlement (1978)
Containment personnel access hatches (1978)

In each of the cases listed above the NRC in it's investigation has determined that the problem was of greater significance than first reported or the problem was more generic than identified by CPCo.

This incomplete wringing out of problems identified has been discussed with CPCo on numerous occasions in connection with CPCo's management of the Midland project.

b. There have been many cases wherein nonconformances have been identified, reviewed and accepted "as is." The extent of review given by the licensee prior to resolving problems is currently in progress. In one case dealing with the repair of airlock hatches, a determination was made that an incomplete engineering review was given the matter.

Inspection History

The construction inspection program for Midland Units 1 and 2 is approximately 60% complete. This is consistent with status of construction of the two units. (Unit 1 - 54%; Unit 2 - 61%). The licensee's QA program has repeatedly been subject to in-depth review by IE inspectors. The following highlight these inspections.

1. July 23-26, and August 8-10, 1973, inspection report Nos. 50-329/73-06 and 50-330/73-06: A detailed review was conducted relative to the implementation of the Consumers Power Company's QA manual and Bechtel Corporation's QA program for design activities at the Bechtel Ann Arbor office. The identified concerns were reported as discrepancies relative to the Part 50, Appendix B, criteria requirements.

2. September 10-11, 1973 report Nos. 50-329/73-08 and 50-330/73-08: A detailed review of the Bechtel Power Corporation QA program for Midland was performed. Noncompliances involving three separate Appendix B criteria with five different examples, were identified.

3. February 6-7, 1974, report Nos. 50-329/74-03 and 50-330/74-03: A followup inspection at the licensee's corporate office, relative to the items identified during the September 1973 inspection (above) along with other followup.

4. June 16-17, 1975, report Nos. 50-329/75-05 and 50-330/75-05: Special inspection conducted at the licensee's corporate office to review the new corporate QA program manual.

5. August 9 through September 9, 1976, report Nos. 50-329/76-08 and 50-330/76-08: Special five-week inspection regarding QA program implementation onsite primarily for rebar installation and other civil engineering work.

6. May 24-27, 1977, report Nos. 50-329/77-05 and 50-330/77-08: Special inspection conducted at the site by RIII, IE AND RI personnel to examine the QA program implementation onsite by Consumers Power Company and by Bechtel Corporation. Although five examples of noncompliance to Appendix B, Criterion V, were identified, the consensus of the inspectors involved was that the program and its implementation for Midland was considered to be adequate.

7. May 8-11, 1979, a mid-construction QA inspection covering purchase control and inspection of received materials design control and site auditing and surveillance activities was conducted by a team of inspectors. While some items will require resolution, it was concluded the program was adequate.

The licensee's Quality Assurance program has undergone a number of revisions to strengthen it's provisions. The company has expanded it's QA/QC auditing and surveillance coverage to provide extensive overview inspection coverage. This was done in 1975 with a commitment early in their experience with rebar installation problems and was further committed by the licensee in his letter of June 18, 1976, responding to report Nos. 50-329/76-04 and 50-330/76-04. This overview inspection activity by the licensee has been a positive supplement to the constructor's own program, however, currently our inspectors perceive the overview activities cover a small percentage of the work in some disciplines. This has been brought to the licensee's attention who has responded with a revised overview plan. RIII inspectors are reviewing the plan as well as determining it's effectiveness through observation of construction work. A specific area brought to the attention of the licensee was the lack of overview in the instrumentation installation area. The licensee has responded to this matter with increased staff and this item is under review by RIII inspectors.

The RIII office of inspection and enforcement instituted an augmented onsite inspection coverage program during 1974, this program has continued in effect until the installation of the resident inspector in July 1978.

Enforcement History

a. Noncompliance Statistics

Year	Number of Noncompliances	Number of Inspections	Inspector Hours Onsite
1976	14	9	646
1977	5	12	648
1978	18	23	1180
*1979 to date	7	18	429

A resident inspector was assigned to the Midland site in July 1978. The onsite inspection hours shown above does not include his inspection time.

*Through August 1979

b. An investigation of the current soils placement/diesel generator building settlement problem has revealed the existence of a material false statement. Issuance of a Civil Penalty is currently being contemplated.

Summary and Conclusions

Since the start of construction Midland has experienced some significant problems resulting in enforcement action. These actions are related (1) to improper placement, sampling and testing of concrete and failure of QA/QC to act on identified deficiencies in September 1970; (2) to drawing control and lack of or inadequate procedures for control of design and procurement activities at the Bechtel Engineering offices in September 1973; (3) to inadequate training, procedures and inspection of cadweld activities in November 1973; (4) to a series of RIII in-depth QA inspections and meetings which identified underlying causes of weakness in the Midland QA program implementation relative to embedments in April, May and June 1976. (The noncompliance items identified involved inadequate quality inspection, corrective action, procedures and documentation, all primarily concerned with installation of reinforcement steel); (5) to tendon sheath omissions in April 1977; and (6) to plant soil foundations and excessive settlement of the Diesel Generator Building relative to inadequate compacted soil and inspection activities in August 1978 through 1979.

Following each of these problem periods, the licensee has taken action to correct the problems and to upgrade his QA program and QA/QC staff. The most prominent action has been an overview program which has been steadly expanded to cover safety related activities.

The evaluation both by the licensee and IE of the structures and equipment affected by these problems (again except the last) has established that they fully meet design requirements.

Looking at the underlying causes of these problems two common threads emerge: (1) utilities historically have tended to over rely on A-E's (in this case, Bechtel) and (2) insensitivity on the part of both Bechtel and Consumers Power to recognize the significance of isolated events or failure to adequately evaluate possible generic application of these events either of which would have led to early identification and avoidance of the problem.

Admittedly construction deficiencies have occurred which should have been identified earlier but the licensee's QA program has ultimately identified and subsequently, corrected or in process of correcting these deficien

The RIII inspectors believe that continuation of (1) resident site coverage, (2) the licensee overview program, (3) the licensee's attention and resolution of identified problems in this report, (4) ceasing to permit work to continue when quality related problems are identified with construction activities and (5) a continuing inspection program by regional inspectors will provide adequate assurance that construction will be performed in accordance with requirements and that any significant errors and deficiencies will be identified and corrected.

Concurrence: Knop, Hayes, Danielson, Maxwell

Hand, Barrett, Cook, Vandel, Jablonski

Lee, Ward, Yin, Gallagher, Fiorelli

MIDLAND SUMMARY REPORT

Facility Data

Docket Numbers	- 50-329 and 50-330
Construction Permits	- CPPR-81 and CPPR-82
Permits Issued	- December 14, 1972
Type Reactor	- PWR; Unit 1, 492 MWe*; Unit 2, 818 MWe
NSSS Supplier	- Babcox & Wilcox
Design/Constructor	- Bechtel Power Corporation
Fuel Load Dates	- Unit 1, 11/81; Unit 2, 11/80
Status of Construction	- Unit 1, 52%, Unit 2, 56%; Engineering 80%

*Approximately one-half the steam production for Unit 1 is dedicaced, by contract, to be supplied to Dow Chemical Corporation through appropriate isolation heat exchangers. Capability exists to alternate to Unit 2 for the steam source upon demand.

Chronological Listing of Major Events

July 1970	Start of Construction under exemption
9/29-30 & 10/1/70	Site inspection, four items of noncompliance identified, extensive review during CP hearings
1971 - 1972	Plant in mothballs pending CP
12/14/72	CP issued
9/73	Inspection at Bechtel Ann Arbor offices, five items of noncompliance identified
11/73	Inspection at site, four items of noncompliance identified (cadweld problem) precipitated the Show Cause Order
12/29/73	Licensee answers Show Cause Order commits to improvements on QA program and QA/QC staff
12/3/73	Show Cause Order issued suspending cadwelding operation
12/6-7/73	Special inspection conducted by RIII & HQ personnel
12/17/73	Show Cause order modified to allow cadwelding based on inspection findings of 12/6-7/73

12/5/75	CP reported that rebar spacing out of specification 50 locations in Unit 2 containment
3/5 & 10/75	CP reported that 63 #6 rebar were either missing or misplaced in Auxiliary Building
3/12/75	RIII held management meeting with CP

8/21/75	CP reported that 42 sets of #6 tie bars were missing in Auxiliary Building
3/22/76	CP reported that 32 #8 rebar were omitted in Auxiliary Building. A stop-work order was issued by CP
3/26/76	RIII inspector requested CP to inform RIII when stop-work order to be lifted and to investigate the cause and the extent of the problem. Additional rebar problems identified during site inspection
3/31/76	CP lifted the stop-work order
4/19 thru 5/14/76	RIII performed in-depth QA inspection at Midland
5/14/76	RIII management discussed inspection findings with site personnel
5/20/76	RIII management meeting with CP President, Vice President, and others.
6/7 & 8/76	RIII follow up meeting with CP management and discussed the CP 21 correction commitments
6/1-7/1/76	Overall rebar omission reviewed by R. E. Shewmaker
7/28/76	CP stops concrete placement work when further rebar placement errors found by their overview program. PN-III-76-52 issued by RIII
8/2/76	RIII recommends HQ notice of violation be issued
8/9 - 9/9/76	Five week full-time RIII inspection conducted
8/13/76	Notice issued
10/29/76	CP responded to HQ Notice of Violations
12/10/76	CP revised Midland QA program accepted by NRR
2/28/77	Unit 2 bulge of containment liner discovered
4/19/77	Tendon sheath omissions of Unit 1 reported
4/29/77	IAL issued relative to tendon sheath placement errors
5/5/77	Management meeting at CP Corporate Office relative to IAL regarding tendon sheath problem

5/24-27/77	Special inspection by RIII, RI and HQ personnel to determine adequacy of QA program implementation at Midland site
6/75 - 7/77	Series of meetings and letters between CP and NRR on applicability of Regulatory Guides to Midland. Commitments by CP to the guides was responsive
7/24/78	Construction resident inspection assigned
8/21/78	Measurements by Bechtel indicate excessive settlement of Diesel Generator Building. Officially reported to RIII on September 7, 1978
12/78 - 1/79	Special investigation/inspection conducted at Midland sites Bechtel Ann Arbor Engineering offices and at CP corporate offices relative to Midland plant fill and Diesel Generator building settlement problem

Selected Major Events

Past Problems

1. Cadweld Splicing Problem and Show Cause Order

A routine inspection, conducted on November 6-8, 1973, as a result of intervenor information, identified eleven examples of four noncompliance items relative to rebar Cadwelding operations. These items were summarized as: (1) untrained Cadweld inspectors; (2) rejectable Cadwelds accepted by QC inspectors; (3) records inadequate to establish cadwelds met requirements; and (4) inadequate procedures.

As a result, the licensee stopped work on cadweld operations on November 9, 1973 which in turn stopped rebar installation. The licensee agreed not to resume work until the NRC reviewed and accepted their corrective action. However, Show Cause Order was issued on December 3, 1973, suspending Cadwelding operations. On December 6-7, 1973 RIII and HQ personnel conducted a special inspection and determined that construction activity could be resumed in a manner consistent with quality criteria. The show cause order was modified on December 17, 1973, allowing resumption of Cadwelding operations based on the inspection results.

The licensee answered the Show Cause Order on December 29, 1973, committing to revise and improve the QA manuals and procedures and make QA/QC personnel changes.

Prehearing conferences were held on March 28 and May 30, 1974, and the hearing began on July 16, 1974. On September 25, 1974, the Hearing Board found that the licensee was implementing its QA program in compliance with regulations and that construction should not be stopped.

2. Rebar Omission/Placements Errors Leading to IAL

Initial identification and report of rebar nonconformances occurred during an NRC inspection conducted on December 11-13, 1974. The licensee informed the inspector that an audit, had identified rebar spacing problems at elevations 642' - 7" to 652' - 9" of Unit 2 containment. This item was subsequently reported per 10 CFR 50.55(e) and was identified as a item of noncompliance in report Nos. 50-329/74-11 and 50-330/74-11.

Additional rebar deviations and omissions were identified in March and August 1975 and in April, May and June 1976. Inspection report Nos. 50-329/76-04 and 50-330/76-04 identified five noncompliance items regarding reinforcement steel deficiencies.

Licensee response dated June 18, 1976, listed 21 separate items (commitments) for corrective action. A June 24, 1976 letter provided a plan of action schedule for implementing the 21 items. The licensee committed not to resume concrete placement work until the items addressed in licensee's June 24 letter were resolved or implemented. This commitment was documented in a RIII letter to the licensee dated June 25, 1976. Although not stamped as an IAL, in-house memos referred to it as such.

Rebar installation and concrete placement activities were resumed in early July 1976, following completion of the items and verification by RIII.

Additional action taken is as follows:

a. By the NRC

(1) Assignment of an inspector full-time on site for five weeks to observe civil work in progress

(2) IE management meetings with the licensee at their corporate offices

(3) Inspection and evaluation by Headquarter personnel

b. By the Licensee

(1) June 18, 1976 letter committing to 21 items of corrective action

(2) Establishment of an overview inspection program to provide 100% reinspection of embedments by the licensee following acceptance by the contractor QC personnel

c. By the Contractor

(1) Personnel changes and retraining of personnel

(2) Prepared technical evaluation for acceptability of each identified construction deficiency

(3) Improvement in their QA/QC program coverage of civil work (this was imposed by the licensee)

3. Tendon Sheath Placement Errors and Resulting Immediate Action Letter (IAL)

On April 19, 1977, the licensee reported, as a Part 50, Section 50.55(e) item, the inadvertent omission of two hoop tendon sheaths from a Unit 1 containment concrete placement at

elevation 703' - 7". The tendon sheaths were, for the most part, located at an elevation in the next higher concrete placement lift, except that they were diverted to the lower placement lift to pass under a steam line penetration and it was where they were omitted. Failure to rely on the proper source documents by construction and inspection personnel, contributed to the omission.

An IAL was issued to the licensee on April 29, 1977, which spelled out six licensee commitments for correction which included: (1) repairs and cause corrective action; (2) expansion of the licensee's QC over view program; (3) revisions to procedures and training of construction and inspection personnel.

A special QA program inspection was conducted in early May 1977. The inspection team was made up of personnel from RI, RIII, and HQ. Although five items of noncompliance were identified, it was the concensous of the inspectors that the licensee's program was an acceptable program and that the Midland construction activities were comparable to most other construction projects.

The licensee issued its final report on August 12, 1977. Final review on site was conducted and documented in report No. 50-329/77-08.

Current Problems

1. Plant Fill - Diesel Generator Building Settlement

The licensee informed the RIII office on September 8, 1978, of per requirements of 10 CFR 50.55(e) that settlement of the diesel generator foundations and structures were greater than expected.

Fill material in this area was placed between 1975 and 1977, with construction starting on diesel generator building in mid-1977. Filling of the cooling pond began in early 1978 with the spring run-off water. Over the year the water level has increased approximately 21 feet and in turn increasing the site gound water level. It is not known at this time what effect (if any) the higher site ground water level has had on the plan fill and excessive settlement of the Diesel Generator Building. It is interesting to note however, that initially the PSAR indicated an underdrain system would be installed to maintain the ground water at its normal (pre pond) level but that it later was deleted.

The NRC activities, to date, include:

a. Transfer of lead responsibility to NRR from IE by memo dated November 17, 1978

b. Site meeting on December 3-4, 1978, between NRR, IE, Consumers Power and Bechtel to discuss the plant fill problem and proposed corrective action relative to the Diesel Generator Building settlement

c. RIII conducted an investigation/inspection relative to the plant fill and Diesel Generator Building settlement

The Constructor/Designer activities include:

a. Issued NCR-1482 (August 21, 1978)

b. Issued Management Corrective Action Report (MCAR) No. 24 (September 7, 1978)

c. Prepared a proposed corrective action option regarding placement of sand overburden surcharge to accelerate and achieve proper compaction of diesel generator building sub soils

Preliminary review of the results of the RIII investigation/ inspection into the plant fill/Diesel Generator Building settlement problem indicate many events occurred between late 1973 and early 1978 which should have alerted Bechtel and the licensee to the pending problem. These events included nonconformance reports, audit findings, field memos to engineering and problems with the administration building fill which caused modification and replacement of the already poured footing and replacement of the fill material with lean concrete.

2. Inspection and Quality Documentation to Establish Acceptability of Equipment

This problem consists of two parts and has just recently been identified by RIII inspectors relative to Midland. The scope and depth of the problem has not been determined.

The first part concerns the adequacy of engineering evaluation of quality documentation (test reports, etc.) to determine if the documentation establishes that the equipment meets specification and environmental requirements. The licensee,

by the licensee's overview program

on November 13, 1978, issued a construction deficiency report (10 CFR 50.55(e)) relative to this matter. Whether the report was triggered by RIII inspector inquiries or by IE Circular or Bulletin is not known. An interim report dated November 28, 1978 was received and stated Consumers Power was pursuing this matter not only for Bechtel procured equipment but also for NSS supplied equipment.

The second part of the problem concerns the adequacy of equipment acceptance inspection by Bechtel shop inspectors. Examples of this problem include: (1) Decay Heat Removal Pumps released by the shop inspector and shipped to the site with one pump assembled backwards, (2) electrical penetrations inspected and released by the shop inspector for shipment to the site. Site inspections to date indicate about 25% of the vendor wire terminations were improperly crimped.

Inspection History

The construction inspection program for Midland Units 1 and 2 is approximately 50% complete. This is consistent with status of construction of the two units. (Unit 1 - 52%; Unit 2 - 56%) In terms of required inspection procedures approximately 25 have been completed, 33 are in progress and 36 have not been initiated.

The routine inspection program has not identified an unusual number of enforcement items. Of the selected major events described above, only one is directly attributable to RIII enforcement activity (Cadweld splicing). The other were identified by the licensee and reported through the deficiency report system (50.55(e)). The Midland data for 1976 - 78 is tabulated below.

Year	Number of Noncompliances	Number of Inspections	Inspector Hours On Site
1976	14	9	646
1977	5	12	648
1978	11	18	706

A resident inspector was assigned to the Midland site in July 1978. The on site inspection hours shown above does not include his inspection time.

The licensee's QA program has repeatedly been subject to in-depth review by IE inspectors. Included are:

1. July 23-26 and August 8-10, 1973, inspection report Nos. 50-329/73-06 and 50-330/73-06: A detailed review was conducted relative to the implementation of the Consumers Power Company's QA manual and Bechtel Corporation's QA program for design activities at the Bechtel Ann Arbor office. The identified concerns were reported as discrepancies relative to the Part 50, Appendix B, criteria requirements.

2. September 10-11, 1973, report Nos. 50-329/73-08 and 50-330/73-08: A detailed review of the Bechtel Power Corporation QA program for Midland was performed. Noncompliances involving three separate Appendix B criteria with five different examples, were identified.

3. February 6-7, 1974, reports No. 50-329/74-03 and 50-330/74-03: A followup inspection at the licensee's corporate office, relative to the items identified during the September 1973 inspection (above) along with other followup.

4. June 16-17, 1975, report Nos. 50-329/75-05 and 50-330/75-05: Special inspection conducted at the licensee's corporate office to review the new corporate QA program manual.

5. August 9 through September 9, 1976, report Nos. 50-329/76-08 and 50-330/76-08: Special five-week inspection regarding QA program implementation on site primarily for rebar installation and other civil engineering work.

6. May 24-27, 1977, report Nos. 50-329/77-05 and 50-330/77-08: Special inspection conducted at the site by RIII, IE and RI personnel to examine the QA program implementation on site by Consumers Power Company and by Bechtel Corporation. Although five examples of noncompliance to Appendix B, Criterion V, were identified, the consensus of the inspectors involved was that the program and its implementation for Midland was considered to be adequate.

Although the licensee's Quality Assurance program has under gone a number of revisions to strengthen its provisions, no current concern exist regarding its adequacy. Their Topical QA Plan has been reviewed and accepted by NRR through revision 7. Implementation of the program has been and continues to be subject to further review with the mid-construction program review presently scheduled for March or April 1979.

Consumers Power Company expanded their QA/QC auditing and surveillance coverage to provide extensive overview inspection coverage. This began in 1975 with a commitment early in their experience with rebar installation problems and was further committed by the licensee in his letter of June 18, 1976, responding to report Nos. 50-329/76-04 and 50-330/76-04. This overview inspection activity by the licensee has been very effective as a supplement to the constructor's own program. Currently, this program is functioning across all significant activities at the site.

Enforcement History

Approximately 6 months after restart of construction activities (11 months after CP issuance) an inspection identified four noncompliance items regarding cadwelding activities. This resulted in a show cause order being issued on December 3, 1973. This enforcement action was aired publicly during hearings held by the Atomic Safety Licensing Board in May 1974. The hearing board issued its decision in September 1974

that concluded that construction could proceed with adequate assurance of quality.

Identification of reinforcing bar problems began in December of 1974 with the licensee reporting improper spacing of rebar in the Unit 2 containment wall. Further reinforcing bar spacing and/or omission of rebar was identified in August 1975 and again in May 1976 with the citations of 5 noncompliances in an inspection report. An IE:HQ notice of violation was issued regarding the citations in addition to the licensee issuing a stop work order. The licensee issued a response letter dated June 18, 1976 committing to 21 items of corrective action. A Bechtel prepared technical assessment for each instance of rebar deficiency was submitted to and review by IE:HQ who concluded that the structures involved will satisfy the SAR criteria and that the function of these structures will be maintained during all design conditions. The RIII office of NRC performed a special five week inspection to assess the corrective action implementation without further citation.

The licensee reported that two hoop tendon sheaths were omitted in concrete placements of Unit 2 containment wall in April 1977. An Immediate Action Letter was issued to the licensee on April 29, 1977 listing six items of licensee commitments to be completed. A special inspection was performed on May 24-27, 1977 with four NRC inspectors (1-HQ, 1-RI, and 2-RIII). Although five items of noncompliance were identified, it was the consensus of the inspectors that the QA/QC program in effect was adequate. The constructors nonconformance report provided an alternate method of installation for the tendon sheaths that was accepted.

The RIII office of inspection and enforcement instituted an augmented on site inspection coverage program during 1974, this program has continued in effect ever since and is still in effect. It is noted that the noncompliance history with this program is essentially the same as the history of other RIII facilities with a comparable status of construction. Further on site inspection augmentations was accomplished with the assignment of a full time resident inspector in August, 1978.

The noncompliance history for the Midland Project is provided in the following table.

ENFORCEMENT ACTIONS

Noncompliances

Year	# Total	Criteria (10 CFR 50 Appendix B) ( ) Number of Occurrances
1970	4	V, X, XI, XVI
1971-1972	0	Construction haulted pending CP
1973	9	II V(5) XIII, XV, XVII
1974	3	V(2) XVI
1975	0	
1976	10	V(4) X, XII, XV, XVI, XVII, XVIII
1977	5	V(5) 10 CFR 50.55(e) item
1978	11	V(4) VI(2), VII, IX(3), XVI

Criteria

II	QA Program
V	Instructions Procedures Drawing Control Work
VI	Document Control
VII	Control of Purchased Material
IX	Control of Special Processes
X	Inspection
XII	Control Measuring - Test Equipment
XIII	Handling - Storage
XV	Nonconforming Parts
XVI	Corrective Actions
XVII	QA Records
XVIII	Audits

Summary and Conclusions

Since the start of construction Midland has experienced some significant problems resulting in enforcement action. In evaluating these problems they have occurred in clumps: (1) in September 1970 relative to improper placement, sampling and testing of concrete and failure of QA/QC to act on identified deficiencies; (2) in September 1973 relative to drawing control and lack of or inadequate procedures for control of design and procurement activities at the Bechtel Engineering offices; (3) in November 1973 relative to inadequate training, procedures and inspection of cadweld activities; (4) in April, May and June 1976 resulting from a series of RIII in-depth QA inspections and meetings to identify underlying causes of weakness in the Midland QA program implementation relative to embedments. (The noncompliance items identified involved inadequate quality inspection, corrective action, procedures and documentation, all primarily concerned with installation of reinforcement steel); (5) in April 1977 relative to tendon sheath omissions; and (6) in August 1978 concerning plant soil foundations and excessive settlement of the Diesel Generator Building.

Following each of these problem periods (excluding the last which is still under investigation), the licensee has been responsive and has taken extensive action to evaluate and correct the problem and to upgrade his QA program and QA/QC staff. The most effective of these licensee actions has been an overview program which has been steadly expanded to cover almost all safety related activities.

The evaluation both by the licensee and IE of the structures and equipment affected by these problems (again except the last) has established that they fully meet design requirements.

Since 1974 these problems have either been identified by the licensee's quality program or provided direction to our inspectors.

Looking at the underlying causes of these problems two common threads emerge: (1) Consumers Power historically has tended to over rely on Bechtel, and (2) insensitivity on the part of both Bechtel and Consumers Power to recognize the significance of isolated events or failure to adequately evaluate possible generic application of these events either of which would have led to early identification and avoidance of the problem including the last on plant fill and diesel generator building settlement.

Notwithstanding the above, it is our conclusion that the problems experienced are not indicative of a broadbreakdown in the overall quality assurance program. Admittedly, deficiencies have occurred which should have been identified earlier by quality control personnel, but the licensee's program has been effective in the ultimate identification and subsequent correction of these deficiencies. While we cannot dismiss the possibility that problems may have gone undetected by the licensee's overall quality assurance program, our inspection program has not identified significant problems overlooked by the licensee --- and this inspection effort has utilized many different inspectors.

The RIII project inspectors believe that continuation of: (1) resident site coverage, (2) the licensee overview program including its recent expansion into engineering design/review activities, and (3) a continuing inspection program by regional inspectors will provide adequate assurance that construction will be performed in accordance with requirements and that any significant errors and deficiencies will be identified and corrected.

Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

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

September 20, 1982

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

MIDLAND NUCLEAR COGENERATION PLANT
DOCKET NOS 50-329 & 50-330
IE BULLETIN 82-01, REVISION 1, SUPPLEMENT NO 1
FILE 0505.12 SERIAL 18856

IE Bulletin 82-01, Rev 1, Supplement 1, "Alterations of Radiographs of Welds in Piping Subassemblies", action no 1 requires Consumers Power Company to conduct a 100% review of all radiography representing welds associated with pipe wall thicknesses less than 1/2 inch in shop fabricated Quality Classes 1 and 2 subassemblies provided by ITT Grinnell, Kernersville, NC. The purpose of the review was to evaluate ASME Code penetrameter sensitivity to determine if it was altered, discernible and that adequate weld quality was demonstrated.

In December 1981, CP Co completed a 100% review of all ITT Grinnell, Kernersville, NC, radiography provided to the Midland Nuclear Site. This review was not limited to material thicknesses less than 1/2 inch, but included all pipe wall thicknesses. This review included approximately 24,000 radiographs representing approximately 5,000 welds. The results of this review are as follows:

1. Four welds were found which had the 4T holes altered in radiographs. These welds have already been reported to the NRC and are specifically addressed in Supplement No 1 of the subject bulletin. Three of the four welds were reradiographed, and the welds were determined to be acceptable without any need for rework or repair. The fourth weld was previously removed during a piping system modification and no longer exists.

2. Three welds for pipe wall thicknesses less than 1/2 inch and two welds for pipe wall thicknesses 1/2 inch and greater were considered by CP Co not to have the required quality level visible. No alteration was involved, only that the required penetrameter hole was not considered visible. All five welds were reradiographed and found to be acceptable without need for either rework or repair.

3. Two welds for pipe wall thicknesses less than 1/2 inch (completely separate from items (1) and (2) above) were considered by CP Co to contain questionable weld indications. Both welds were repaired, reradiographed and are now acceptable.

Based on the results of the review outlined above, we consider the action required by this bulletin to be complete.

James W. Cook

JWC/WJH/acr

CC RJCook, Midland Resident Inspector
RCDeYoung, NRC
DSHood, NRC
DBMiller (3), Midland
NCMoseley, NRC

CONSUMERS POWER COMPANY

MIDLAND NUCLEAR COGENERATION PLANT

DOCKETS 50-329 & 50-330

RESPONSE TO IE BULLETIN NO 82-01, REV 1, SUPPLEMENT 1, ACTION ITEM 1

At the request of the Commission and pursuant to the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974, as amended, and the Commission's Rules and Regulations thereunder, Consumers Power Company submits our response to Action Item 1 of IE Bulletin 82-01, Rev 1, Supplement 1, August 18, 1982.

CONSUMERS POWER COMPANY

BY J. W. Cook

J W Cook, Vice President
Projects, Engineering and Construction

Sworn and subscribed to before me this 27 day of September, 1982.

Barbara R. Swanson

Notary Public
Jackson County, Michigan

My commission expires September 8, 1984

mi0982-0059b168

ATTACHMENT 1

ENFORCEMENT STATISTICS

YEAR	INSPECTIONS	NONCOMPLIANCES/ DEVIATIONS	HEADQUARTERS NOTICE OF VIOLATION	CIVIL PENALTIES	IALs/ CALs	ORDERS MODIFYING CP/ SHOW CAUSE ORDERS	SIGNIFICANT CONSTRUCTION PROBLEMS
1970	6	4	0	0	0	0	0
1971	2	0	0	0	0	0	0
1972	1	0	0	0	0	0	0
1973	11	6	0	0	0	1 (Cadwelds)	1 (Cadwelds)
1974	11	3	0	0	0	0	0
1975	1	0	0	0	0	0	0
1976	9	17	1 (Rebar)	0	1 (Rebar)	0	1 (Rebar)
1977	15	10	0	0	1 (Tendon Sheath)	0	2 (Bulge in Containment Liner and Tendon Sheath Installation Errors)
1978	23	14	0	0	0	0	1 (Diesel Generator Bldg. Settlement)
1979	30	17	0	0	0	1 (Diesel Generator Bldg. Settlement)	0
1980	37	21	0	1 (Zack)	1 (Zack)	0	2 (Zack HVAC & Reactor Anchor Studs)
1981	23	21	0	0	1 (Pipe Suspension System)	0	1 (Pipe Suspension System)
1982	26	20	0	1 (DGB)	4 (Soils, DGB)	2 (Diesel Generator Bldg. Settlement)	2 (Electric Cable Routing, Diesel Generator Bldg. Insp.)
1983	6	6	0	0	0	0	0

DW HAYES

MIDLAND UNITS 1 AND 2

Major Events Ladder

December 5, 1974 - Rebar spacing nonconformance identified for Unit 2 containment by licensee

March 5 & 10, 1975 - Rebar deficiencies in Auxiliary Building identified by licensee; RIII accepts justification.

April 9, 1975 - Bechtel engineering justification for rebar spacing in Unit 2 containment accepted by RIII. (Report No. 75-03.)

April 16, 1975 - Meeting at Consumers Power Company Corporate office; Hunnicutt, Hayes, and LeDoux relative to rebar spacing in containment and missing rebar in Auxiliary Building.

April 28, 1975 - Unit 2 containment rebar spacing reanalysis accepted.

August 21, 1975 - RIII notified of rebar omitted in Auxiliary Building.

May 4, 1976 - Bechtel conclusion, that missing rebar in Auxiliary Building will not affect integrity, referred to Headquarters; Hayes to Seyfrit.

June 7 & 8, 1976 - Meeting, Consumers Power Company, Jackson; Keppler and others vs Selby and others relative to missing rebar in Auxiliary Building and QA deficiencies per Report No. 76-04.

June 18 & 24, 1976 - Licensee letters of response committing to 21 items of corrective action in response to Report No. 76-04.

June 25, 1976 - Keppler to Consumers Power Company; Immediate Action Letter per Jordan to Keppler memo 8/26/76.

July 14, 1976 - IE concurred with the Bechtel conclusion regarding missing rebar in Auxiliary Building, Seyfrit to Hunnicutt.

July 28, 1976 - PN-III-76-52 issued on concrete work stoppage due to further rebar placement errors found as a result of Consumers' overview program instigated in late June 1976.

August 2, 1976 - Keppler letter to Headquarters recommending Headquarters' Notice of Violation be issued. Notice sent 8/13/76

October 29, 1976 - Consumers Power Company responded to Headquarters' Notice of Violations.

November 30, 1976 - Hearings take place on environmental matters. Completed in January 1977.

December 10, 1976 - Consumers Power Company's Midland QA Program accepted by NRR.

*July 1977 - Staff commenced responding on Consumers Power Company's Regulatory Guide use.

February 26, 1977 - Bulge occurrence of Unit 2 containment liner discovered - reported on February 28, 1977.

April 14, 1977 - Meeting, Ann Arbor, to review activities of bulged liner plate repair.

April 19, 1977 - Tendon sheath omission of Unit 1 reported.

April 29, 1977 - Immediate Action Letter issued relative to tendon sheath placement errors.

*See backup information on Regulatory Guides.

May 5, 1977	- Meeting, Consumers Power Company, Jackson; Keppler, Heishman, and Hayes relative to Immediate Action Letter discussion regarding tendon sheath problem.
May 24 - 27, 1977	- Special QA inspection to determine adequacy of QA program implementation at Midland.
June 30, 1977	- Meeting, Ann Arbor; R. F. Heishman and R. E. Shewmaker; release to proceed for tendon sheath omission and for bulge repair.
August 1 - 5 & 8 - 9, 1977	- Site inspection to witness start of repairs for bulge liner and review records of completion of tendon sheath.
August 12, 1977	- Final 50.55(e) report on tendon sheath.
August 15, 1977	- Final report on liner plate repair.

ENFORCEMENT HISTORY - MIDLAND 1 AND 2

Report Number	Number of Noncompliances
70-1	0
70-2	0
70-3	0
70-4	0
70-5	0
70-6	4
71-1	0
71-2	0
	4
72-1	0
73-1	0
73-2	0
73-3	0
73-4	0
73-5	0
73-6	0
73-7	0
73-8	5
73-9	0
73-10	4
73-11	0
	9

Show Cause Order Issued 12/3/73

As of 8/24/76, nine stop-work orders issued by CP.

Report Number	Number of Noncompliances	
74-1	1	
74-2	0	
74-3	0	
74-4	1	
74-5	0	
74-6	0	
74-7	0	
74-8	0	
74-9	0	
74-10	0	
74-11	1	
	3	
75-1	0	
75-2	0	
75-3	0	
75-6	0	
75-7	0	
76-1	3	
76-2	2	
76-3	0	
76-4	5	= HQ's Notice of Violation
76-5	0	
76-6	0	
	10	
77-1	0	
77-2	1	
77-3	0	
77-4	0	
77-5	0	
	1	(Total 27)

MIDLAND 1 AND 2

CHRONOLOGICAL LISTING OF QA/QC EMBEDMENT PROBLEMS

9/29-30 & 10/1/70: Site Inspection conducted. Four nonconformances regarding: (1) placement activities violated ACI Code, (2) lab not performing tests per PSAR, (3) sampling not per ASTM, and (4) QA/QC personnel did not act on deviations when identified. This was considered during hearings.

1971: In mothballs pending CP.

1972: In mothballs pending CP.

12/14/72: CP issued.

(Calvert Cliffs impacted on CP issuance.)

9/73: Five nonconformance of Bechtel Ann Arbor activities.

11/73: Four separate criteria nonconformances with several examples of each, including cadweld splicing, storage of materials, identification of acceptance, and resulting records. Precipitated the Show Cause Order.

12/5/74: CP reported to RIII per 50.55(e) that rebar spacing out of specification 50 locations in Unit 2 containment (RIII Reports 75-01, 75-02, and 75-03).

3/5 & 10/75: CP reported to RIII that approximately 63 #6 rebar were either missing or misplaced in Auxiliary Building. (RIII Report 75-03.)

3/12/75: RIII held management meeting with CP (RIV letter to CP, dated April 16, 1975).

8/21/75: CP reported to RIII that 42 sets of #6 tie bars were missing in Auxiliary Building (RIII Report 75-07).

3/22/76:	CP reported to RIII that approximately 32 #8 rebar were omitted in Auxiliary Building. A stop-work order was issued by CP (RIII Report 76-04).
3/26/76:	RIII inspector requested CP to inform RIII when stop-work order to be lifted and to investigate the cause and the extent of the problem. Additional rebar problems identified during site inspection (RIII Report 76-04).
3/31/76:	CP lifted the stop-work order.
4/19 thru 5/14/76:	RIII performed in-depth QA inspection at Midland (RIII Report 76-04).
5/14/76:	Discussed inspection findings with site personnel (RIII Report 76-04).
5/20/76:	RIII management meeting with CP President, Vice President, and others.
6/7 & 8/76:	RIII follow-up meeting with CP management and discussed the CP 21 correction commitments.
6/1-7/1/76:	Overall rebar omission reviewed by R. E. Shewmaker (Report 76-05).
8/9 thru 9/9/76:	Five-week, full-time onsite inspection conducted by RIII inspector (RIII Report 76-08).
2/28/77:	Unit 2 bulge of containment liner discovered.
4/19/77:	Tendon sheaths problem of Unit 1 was reported.

REBAR OMISSION PROBLEM

Inspection Report File Information

12/5/74 - CP identified rebar spacing noncompliance for Unit 2 containment wall. Issued QF-36 and stop-work FSW-6 December 6, 1974. Inspection conducted on December 11 - 13, 1974. Inspection Report No. 74-11.

2/5-7/75 - Inspection Report No. 75-01

More information requested for stress analysis for the rebar spacing of December 5, 1974. Tentative submittal March 15, 1975. NRC refuted existing analytical work.

2/26/75 - Inspection Report No. 75-02

NRC reviewed stress analysis on rebar spacing nonconformance. NRC refuted (CP agreed with NRC) analysis. Another analysis report due March 28, 1975.

4/8-9/75 - Inspection Report No. 75-03

NRC accepts Bechtel engineering justification. Resolves rebar spacing of December 5, 1974 for rebar in Unit 2 containment. Auxiliazry Building rebar deviations - found by CP on March 5 and 10, 1975. NRC accepts the licensee computations.

10/23-24/75 - Inspection Report No. 75-07

August 21, 1975, NRC notified of rebar not installed in Auxiliary Building. NRC accepts CP analysis.

4/19-21, 5/3, 6-7, 13-14, and 20, 6/7-8/76 - Inspection Report No. 76-04

Bechtel concluded missing rebar in Auxiliary Building will not affect integrity. Referred to Headquarters.

QA inspection: Licensee letter June 18, 1976; licensee letter June 24, 1976.

Inspection Report No. 76-05 states revised and new work

procedures for concrete placement acceptable. Covered under licensee letter of June 24, 1976, under "Activities to be Completed Prior to Resumption of Q-Listed Concrete Placement."

6/24, 25, 30 and 7/1/76 - Inspection Report No. 76-05

IE:HQ did not identify any deficiency with Auxiliary Building rebar omissions.

Bechtel trend analysis not accepted by NRC - found acceptable in 76-09 dated November 1976. November 16 - 19, 1976, Bechtel trend analysis accepted by NRC.

8/9 - 9/9 and 23/76 - Inspection Report No. 76-08

Completes same licensee commitments from 76-04.

11/16-19/76 - Inspection Report No. 76-09

Inspector review of "Bechtel Trend Analysis" was found to be acceptable and considered resolved.

LETTER FILE

12/5/74 - CP quality assurance coordination found rebar spacing out of specification on containment wall of unit 2.

12/6/74 - Stop-work order issued by CP.

12/11-13/74 - Site inspection.

6/10/75 - Meeting by Mr. Yin with Mr. Slager, CP staff. Meeting held in RIII offices to review unresolved and/or open items from RIII inspection reports from 1970 to present.

11/18/75 - Meeting at Headquarters between RIII, IE, and CP to discuss implementation of Regulatory Guides 1.20, 1.26, 1.29, 1.46, 1.48, 1.67, and 1.72.

2/4/76 - Meeting scheduled for 2/4/76 between RIII, IE, and CP. Meeting to review noncompliance items and unresolved items identified during RIII inspection of 1/14-16/76.

Infractions:

1. No assurance temperature limits were exceeded on concrete pours.
2. No measures to identify nonconforming aggregate.
3. Nonconforming aggregate not disposed of as required.

2/4/76 - Meeting at CP corporate offices between CP, Hunnicutt, and Hayes. The meeting reviewed noncompliance and unresolved items from January 13 - 16, 1976 (Inspection Report No. 76-01). Meeting discussed effectiveness of QA/QC effectiveness. Licensee responded with letter of March 5, 1976.

4/28/75 - Memo of Yin to file. Yin review of BAPC report claims that rebar spacing problem in Unit 2 containment is considered resolved.

March 5, 1975 \
March 10, 1975 / CP notifies NRC of missing rebar in Auxiliary Building.

Letter April 16, 1975, Keppler-CP. Refers to meeting at CP corporate office with Hunnicutt, Hayes, and LeDoux. Meeting to discuss rebar spacing in Unit 2 containment and missing rebar in Auxiliary Building. CP committed to:

1. Complete safety evaluation and engineering review for rebar spacing discrepancy.
2. Continue review of safety implications and reportability considerations for missing rebar.
3. Complete formulation and implementation of corrective measures.

2/26/75 - Inspection at BAPC, Ann Arbor. NRC refuted analysis. On April 28, 1975 (Yin memo) analysis accepted

3/16-18, 24-26/76 - Inspection Report No. 76-02

Addresses continued rebar omission. Discussed with D. W. Hayes on April 13, 1976. Report letter dated April 20, 1976.

Letter, March 5, 1976, CP-Keppler

Responds to citations of inspection of January 13-16, 1976.

Citation: Concrete temperature, aggregate control, and disposal of aggregate.

May 4, 1976, Memo Hayes to Seyfrit

Refers to Headquarters for review and evaluation of missing/misplaced rebar for periods of 2/76, 3/76, 10/74, 7/74 ----

May 20, 1976 - Scheduled meeting at Jackson CP corporate offices to discuss noncompliance of April 19-May 20, 1976 inspection (Report No. 76-04).

6/8/76 - CP issued stop-work order for placement of safety-related concrete. Referenced in NRC letter (Keppler) to CP dated June 25, 1976.

6/18/76 - CP response letter to inspection findings of April - May 1976 (Inspection Report No. 76-04) 20 items.

6/24/76 - CP response letter relative to schedule for plan of action for items of June 18, 1976 CP letter.

6/25/76 - Letter, Keppler to CP. States resumption of concrete placement for safety-related structure will not start until certain items addressed in CP letter of June 24, 1976 are resolved. Memo, Jordan to Keppler, dated 8/26/76 refers to this as Immediate Action Letter.

7/14/76 - Memo, Seyfrit to Hunnicutt. Response to Hayes's memo of May 4, 1976, as a result of Yin-Shewmaker inspection of June 24 and 25, 1976. The strength considerations for missing/misplaced rebar is considered resolved.

7/27/76 - RIII informed by CP that:

Concrete work stopped because of errors in placing rebar.

PN-III-76-52 filed on July 28, 1976, states work stopped also in June 1976 and on three earlier occasions.

Rebar placement error of July 1, 1976, was in Auxiliary Building.

8/2/76 - Keppler letter to Thompson recommending Headquarters' Notice of Violation. Notice sent August 13, 1976.

6/7 & 8/76 - (and May 20, 1976) meeting at CP corporate offices. Meeting involved Selby and other and Keppler and others.

10/18/76 - Hearing date set for November 16, 1976. Rescheduled later (11/18/76 to 11/30/76). Environmental.

8/13/76 - Notice of Violation issued to CP (Selby).

10/29/76 - CP response to Notice of Violation.

12/8/76 - Notice to resume Midland hearing on December 14, 1976.

12/16/76 - 50.55(e) on deformed (defective) component cooling water pump casings.

12/29/76 - Notice of resuming Midland hearing on January 8, 1977, in Chicago, Illinois.

REGULATORY GUIDES

Backup File - 1975

2/12/75 - J. G. Davis letter CP: acknowledge receipt of Consumers' report on reinforcing bar spacing (50.55(e)). Control No. H00419F3.

5/19/75 - Letter: S. H. Howell to A. Giambusso. First quarter '75 Financial Report. Page 3: QC/QA activities remain unchanged-curtailment of construction activities.

6/13/75 - NRC Schedule.

7/3/75 - Letter, R. C. Bauman (CP) to A. Schwencer. References meeting of June 24, 1975 between NRC and CP to discuss applicability of Regulatory Guides through Regulatory Guide 1.75 at Midland. List of Regulatory Guides having some disparity with Midland construction.

7/24/75 - Letter, Bauman to Giambusso. Refers to NRC-CP meeting of 7/22/75. Implementation of QA Regulatory Guides at Midland.

10/2/75 - Letter, Bauman to Boyd (NRC). Refers to tentative meeting on Materials Engineering Regulatory Guide 1.31. States Midland position.

10/14/75 - Letter, Cooke to Keppler, NRC Schedule.

11/14/75 - Letter, A. Schwencer to CP addressing additional loads on vessel support system. NRC investigating but indicate present design may be adequate.

11/7/75 - Letter, Bauman to NRR (Boyd). Midland position on Regulatory Guides 1.1, 1.4, 1.7, 1.13, 1.25, 1.42, 1.49, 1.52, 1.54, and 1.70.

11/14/75 - Letter, Cooke to Keppler. NRC Schedule.

11/19/75 - Letter, Schwencer to CP. NRC staff position on Regulatory Guide implementation at Midland. Refers CP letter of 9/11/75.

12/1/75 - Letter, Bauman to NRR (Boyd). Midland position and information to NRR on use of Regulatory Guides.

12/11/75 - Letter, Bauman to NRR (Boyd). Refers Schwencer's letter of 11/14/75. Supplies additional supporting information to vessel support system.

12/17/75 - Letter, Bauman to NRR (Boyd). Supplies additional information in response to Schwencer's letter of 11/19/75 on Regulatory Guide implementation and procurement status of plant components.

7/21/75 - Letter, Bauman to Schwencer (NRC). CP position on Regulatory Guide use. Refers to meeting of July 22, 1975.

8/8/75 - Letter, Howell to Giambusso. Financial status. No QC/QC changes. Indicates tentative change of personnel: Keeley as Midland Project Manager replaces Kessler; F. Southworth named Director of QA Services. Both effective August 1, 1975.

10/10/75 - Letter, Bauman to NRR (Boyd). Information on Midland Regulatory Guide positions. Refers to tentative Regulatory Guide meeting of 11/13/75.

10/15/75 - Letter, Bauman to NRR (Boyd). CP position on Regulatory Guide use at Midland.

11/10/75 - Letter, Howell to Giambusso. Financial report plus no change to QC/QA. Indicates construction escalation on January 1976.

1/13/76 - Letter, Schwencer to CP. Comments and request for information for use of Regulatory Guides at Midland. Refers letter, CP to NRR of 11/7/75.

1/13/76 - Letter, Schwencer to CP. Request for information on Regulatory Guide use at Midland. Refers to letter CP to NRR dated 10/10/75.

1/26/76 - Letter, Schwencer to CP. NRC comments and request for information on use of Regulatory Guides 1.26, 1.20, and 1.94.

2/3/76 - Letter, Bauman to NRR (Boyd). Supplies information requested in Schwencer's letter dated 12/23/75 pertaining to Regulatory Guide use - electrical engineering.

2/3/76 - Letter, Bauman to NRR (Boyd). Supplies information requested in Schwencer's letter dated 10/30/75 on use of Regulatory Guide 1.59.

2/3/76 - Letter, Bauman to NRR (Boyd). Responds to Schwencer's letter dated 1/13/76 and supplies additional inforamtion on use of Regulatory Guides.

2/5/76 - Letter, Bauman to NRR (Boyd). Responds to Schwencer's letter dated 1/26/76 requesting information on use of Regulatory Guides 1.26 and 1.29.

2/10/76 - Letter, Bauman to NRR (Boyd). Final response to Schwencer's letter dated 1/26/76 requesting information on use of Regulatory Guide 1.94.

3/23/76 - Letter, Kneil (NRC) to CP announcing meeting at RIII March 30, 1976, on Section V.B of Appendix I, 10 CFR 50. Also, letter, Kneil to CP dated 4/23/76. Also, letter, Kneil to CP dated 5/10/76. Also, letter, Howell to NRR dated 3/15/77.

3/2/76 - Letter, Howell to Rusche requesting relief from Quarterly Financial Reports established in Giambusso letter of September 13, 1974.

5/3/76 - Letter, Boyd to CP. Relieves CP of Quarterly Financial Report and conditions of Giambusso letter of September 13, 1974.

6/14/76 - Letter, Kneil to CP. Staff position on use of Regulatory Guides 1.10, 1.12, 1.15, 1.18, 1.19, 1.35, 1.60, 1.61, and 1.92. (Regulatory Guides 1.27, 1.55, and 1.59 excluded.) Refers to CP letters of 7/21/75, 8/19/75, 12/1/75, and 2/3/76.

7/14/76 - Letter, Vassallo (NRR) to CP. Letter requires CP do a reevaluation of vessel support systems for LOCA conditions.

10/8/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.28, 1.30, 1.37, 1.38, 1.39, 1.58, 1.64, 1.74, 1.88, and 1.94 covered in CP of October 15, 1975. Also, staff position on use of Regulatory Guides 1.54 and 1.55 covered in CP letters of November 7, 1975 and August 19, 1975.

10/8/76 - Letter, Varga to CP. Staff position - partial response to CP letter of October 10, 1975, for use of Regulatory Guides 1.20, 1.26, 1.29, 1.46, 1.48, and 1.67.

10/15/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.6, 1.9, 1.11, 1.22, 1.32, 1.40, 1.41, 1.45, 1.47, 1.53, 1.62, 1.63, 1.73, 1.75, and 1.81. Regulatory Guide 1.12 addressed in NRC letter of June 8, 1976. Refers to CP letters of July 21, 1975 and February 3, 1976.

10/12/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.1. 1.4, 1.7, 1.13, 1.25, 1.27, 1.42, 1.49, 1.52, and 1.59. (Excludes 1.54.) Refers to CP letters of August 19, 1975, November 7, 1975, and February 3, 1976. Staff position on Regulatory Guide 1.70 covered in NRC letter of June 2, 1976.

12/10/76 - Letter, Varga to CP accepts Midland Design and Construction QA Program (10 CFR 50, Appendix A). Submitted to NRC by CP on 11/9/76.

1/5/77 - Letter, Howell to Vassallio (NRR). Vessel support analysis due 4/77. References letters of NRR-CP, 7/14/76, and CP to NRR, 9/10/76.

3/15/77 - Letter, Howell to NRR (Boyd). Additional information on Appendix I. Refers to backup information on 3/23/76.

4/29/77 - Letter, Howell to Vassallio. Vessel support analysis due 7/77. Reference 1/5/77 and 6/8/77.

6/27/77 - Letter Howell to NRR (Boyd). Clarification of PSAR Amendment 32 dated 4/4/77. Electrical penetration information.

7/19/77 - Letter, Howell to NRR (Boyd). Addresses CP position on use of Regulatory Guides 1.10, 1.12, 1.15, 1.18, 1.19, 1.35, 1.57, 1.60, 1.61, 1.90, and 1.92. Refers NRC letter of 6/8/76. GIVES SUMMARY STATUS OF REGULATORY GUIDE USE FOR STRUCTURAL ENGINEERING.

7/19/77 - Letter, Howell to NRR (Boyd). Addresses CP position on use of Regulatory Guides 1.6, 1.9, 1.11, 1.22, 1.32, 1.40, 1.41, 1.45, 1.47, 1.53, 1.62, 1.63, 1.73, 1.75, and 1.81. Refers NRC letter of 9/29/76. GIVES SUMMARY STATUS FOR REGULATORY GUIDE USE FOR STRUCTURAL (ELECTRICAL) ENGINEERING.

7/28/77 - Letter, Howell to NRR (Boyd). Proposed FSAR Section 13.2 on Plant Staff Training for Cold Operator Training.

UNIT 2 LINER PLATE BULGE

2/26/77 - Bulge occurrence discovered at 11:00 p.m. (Report No. 50-330/77-02).

2/28/77 - 50.55(e) prompt report to RIII at 2:15 p.m.

3/16/77 - NRC letter with report to licensee with noncompliance regarding failure to report timely.

4/5/77 - Response letter. Commitment made to provide procedure "Reporting Deficiencies to NRC" No. 20-2, Revision No. 3, to prevent recurrence. Currently, Revision 3 still in review and modification stage.

3/23/77 - NRR representative visited site with inspector for damage briefing (50-330/77-04).

4/14/77 - Meeting at Ann Arbor to review actions of bulged plate removal and to review activities relative to proposed repair; D. W. Hayes and R. E. Shewmaker (77-06).

5/4/77 - Site visit for inspection of existing conditions of liner bulge area. D. W. Hayes and R. E. Shewmaker (50-330/77-07).

5/16/77 - Interim report issued per 50.55(e).

5/24-27/77-Special QA Program Inspection.

6/20/77 - Interim report issued per 50.55(e).

6/29-30/77-Site Inspection by R. E. Shewmaker (6/29/77) - (50-330/77-10). Meeting, Ann Arbor (6/30/77) R. E. Shewmaker and R. F. Heishman. Release for proceeding with repairs. Notify when start of repairs.

8/1-5 & 8-9/77 - Site Inspection, T. E. Vandel. Witness start of repairs with first four-foot lift of liner plate installed and grouted. Satisfactory. (Report No. 50-330/77-11.)

8/15/77 - Final report issued per 50.55(e) in review by R. E. Shewmaker. Further site inspection planned later.

UNIT 1 TENDON SHEATH PROBLEM

4/19/77 - 50.55(e) prompt notification report to RIII made.

4/20/77 - PN-III-77-18 issued.

4/29/77 - Immediate Action Letter issued to CP. Six items of commitments:

1. Notify RIII prior to repairs or modifications. Complete (see Report No. 50-329/77-07).
2. Complete investigation of cause and implement C.A. Not complete, still in discussions with Bechtel regarding adequate performance.
3. Expand overview program - expanded program in process.
4. Notify NRC of placement errors for all embedments starting May 9 and for next 120 days. - 120 days completes on September 9; during that time seven separate items have been reported. See backup sheet A.
5. Review and revice QC inspection procedures. All Bechtel QCI's have undergone review. Revision in progress.
6. Training of QC engineers and field engineers expanded. Training program and retraining is underway.

5/5/77 - Meeting in Jackson with Keppler, Heishman, and Hayes.

5/19/77 - Interim report issued per 50.55(e).

5/24-27/77-Special QA Program Inspection. Five noncompliance items.

1. Bechtel: inadequate piping hanger support plate installation. Currently still open.
2. Bechtel: field engineers mark up installation drawings for hangers. Currently CA complete.
3. Consumers: audit report remain unissued (4). Currently CA complete.
4. Consumers: trends analysis procedure unimplemented. Currently CA complete.

5. Champion (Batch Plant): defective batch scale not tagged per procedure. Currently CA complete.

Additional CA for items 3 and 4. CP to reorganize and provide additional manpower. Currently new organization in effect and most all personnel additions completed in August to be reviewed further later. (See organization chart backup sheet B.)

6/27/77 - Interim report issued per 50.55(e).

6/29-30/77- Site Inspection by R. E. Shewmaker (6/29/77) - (50-329/77-07). Meeting in Ann Arbor (6/30/77). R. E. Shewmaker and R. F. Heishman. Release for proceeding with repairs.

8/1-5 & 8-9/77 - Site Inspection, T. E. Vandel. Report No. 50-329/77-08. Complete record review of repairs to tendon sheaths. No problem areas identified. Installation was accomplished as proposed.

8/12/77 - Final report issued per 50.55(e). Review is completed and thank you letter states that we have no further questions.

BACKUP SHEET A

1. Tendon Sheathing, 5/19/77 identified errors on Vertical Sheaths - notified on 5/24/77 (NCR-803) C
2. D.W. Hayes - 6/22/77, 9 #11 bars missing (QF-169)
3. I. T. Yin - 7/15/77, 2 #11 bars missing (NCR-863)
4. D. W. Hayes - 7/28/77, 2 bars missing (QF-175) C
5. T. E. Vandel - 8/15/77, 8 #8 wall dowels missing (QF-176) C
6. D. W. Hayes - 8/16/77, 4 cut bars not replaced (NCR-898)
7. C. E. Jones - 8/17/77, pipe restraint controls omitted - reactor building (NCR-910)

C = Complete

BACKUP SHEET B

Other Items

A. May 27, 1977 - Final report per 50.55(e) regarding the surveillance specimen holder tubes (provided by B&W)
Follow-up agreements were outlined in our letter of thanks dated June 21, 1977.

B. May 27, 1977 - Final report per 50.55(e) regarding component cooling water pump casings.
No comment by RIII, since casings have been rejected and will not be used for Midland.

C. May 24, 1977 - PN-III-77-30, Industrial Accident - Death of Construction Worker (no repercussions)

D. March 22, 1977 - Meeting in RIII offices with B. W. Marguglio, CP Director of Project Quality Assurance Services regarding contemplated independent inspection of NSSS installations.

E. November 14, 1975 - Vessel support LOCA loading adequacy - question.
Analysis is due July 1977 to NRR.

T.E. Vo. 1.1

MIDLAND SUMMARY REPORT

Facility Data

Docket Numbers	- 50-329 and 50-330
Construction Permits	- CPPR-81 and CPPR-82
Permits Issued	- December 14, 1972
Type Reactor	- PWR; Unit 1, 492 MWe*; Unit 2, 818 MWe
NSSS Supplier	- Babcox & Wilcox
Design/Constructor	- Bechtel Power Corporation
Fuel Load Dates	- Unit 1, 11/81; Unit 2, 11/80
Status of Construction	- Unit 1, 52%, Unit 2, 56%; Engineering 80%

*Approximately one-half the steam production for Unit 1 is dedicated, by contract, to be supplied to Dow Chemical Corporation, through appropriate isolation heat exchangers. Capability exists to alternate to Unit 2 for the steam source upon demand.

Chronological Listing of Major Events

July 1970	Start of Construction under exemption
9/29-30 & 10/1/70	Site inspection, four items of noncompliance identified, extensive review during CP hearings
1971 - 1972	Plant in mothballs pending CP
12/14/72	CP issued
9/73	Inspection at Bechtel Ann Arbor offices, five items of noncompliance identified
11/73	Inspection at site, four items of noncompliance identified (cadweld problem) precipitated the Show Cause Order
12/29/73	Licensee answers Show Cause Order commits to improvements on QA program and QA/QC staff
12/3/73	Show Cause Order issued suspending cadwelding operation
12/6-7/73	Special inspection conducted by RIII & HQ personnel
12/17/73	Show Cause order modified to allow cadwelding based on inspection findings of 12/6-7/73

12/5/74	CP reported that rebar spacing out of specification 50 locations in Unit 2 containment
3/5 & 10/75	CP reported that 63 #6 rebar were either missing or misplaced in Auxiliary Building
3/12/75	RIII held management meeting with CP

8/21/75	CP reported that 42 sets of #6 tie bars were missing in Auxiliary Building
3/22/76	CP reported that 32 #8 rebar were omitted in Auxiliary Building. A stop-work order was issued by CP
3/26/76	RIII inspector requested CP to inform RIII when stop-work order to be lifted and to investigate the cause and the extent of the problem. Additional rebar problems identified during site inspection
3/31/76	CP lifted the stop-work order
4/19 thru 5/14/76	RIII performed in-depth QA inspection at Midland
5/14/76	RIII management discussed inspection findings with site personnel
5/20/76	RIII management meeting with CP President, Vice President, and others.
6/7 & 8/76	RIII follow up meeting with CP management and discussed the CP 21 correction commitments
6/1-7/1/76	Overall rebar omission reviewed by R. E. Shewmaker
7/28/76	CP stops concrete placement work when further rebar placement errors found by their overview program. PN-III-76-52 issued by RIII
8/2/76	RIII recommends HQ notice of violation be issued
8/9 - 9/9/76	Five week full-time RIII inspection conducted
8/13/76	Notice issued
10/29/76	CP responded to HQ Notice of Violations
12/10/76	CP revised Midland QA program accepted by NRR
2/28/77	Unit 2 bulge of containment liner discovered
4/19/77	Tendon sheath omissions of Unit 1 reported
4/29/77	IAL issued relative to tendon sheath placement errors
5/5/77	Management meeting at CP Corporate Office relative to IAL regarding tendon sheath problem

5/24-27/77	Special inspection by RIII, RI and HQ personnel to determine adequacy of QA program implementation at Midland site
6/75 - 7/77	Series of meetings and letters between CP and NRR on applicability of Regulatory Guides to Midland. Commitments by CP to the guides was responsive
7/24/78	Construction resident inspection assigned
8/21/78	Measurements by Bechtel indicate excessive settlement of Diesel Generator Building. Officially reported to RIII on September 7, 1978
12/78 - 1/79	Special investigation/inspection conducted at Midland site Bechtel Ann Arbor Engineering offices and at CP corporate offices relative to Midland plant fill and Diesel Generator building settlement problem

Selected Major Events

Past Problems

1. Cadweld Splicing Problem and Show Cause Order

A routine inspection, conducted on November 6-8, 1973, as a result of intervenor information, identified eleven examples of four noncompliance items relative to rebar Cadwelding operations. These items were summarized as: (1) untrained Cadweld inspectors; (2) rejectable Cadwelds accepted by QC inspectors; (3) records inadequate to establish cadwelds met requirements; and (4) inadequate procedures.

As a result, the licensee stopped work on cadweld operations on November 9, 1973 which in turn stopped rebar installation. The licensee agreed not to resume work until the NRC reviewed and accepted their corrective action. However, Show Cause Order was issued on December 3, 1973, suspending Cadwelding operations. On December 6-7, 1973 RIII and HQ personnel conducted a special inspection and determined that construction activity could be resumed in a manner consistent with quality criteria. The show cause order was modified on December 17, 1973, allowing resumption of Cadwelding operations based on the inspection results.

The licensee answered the Show Cause Order on December 29, 1973, committing to revise and improve the QA manuals and procedures and make QA/QC personnel changes.

Prehearing conferences were held on March 28 and May 30, 1974, and the hearing began on July 16, 1974. On September 25, 1974, the Hearing Board found that the licensee was implementing its QA program in compliance with regulations and that construction should not be stopped.

2. Rebar Omission/Placements Errors Leading to IAL

Initial identification and report of rebar nonconformances occurred during an NRC inspection conducted on December 11-13, 1974. The licensee informed the inspector that an audit, had identified rebar spacing problems at elevations 642' - 7" to 652' - 9" of Unit 2 containment. This item was subsequently reported per 10 CFR 50.55(e) and was identified as a item of noncompliance in report Nos. 50-329/74-11 and 50-330/74-11.

Additional rebar deviations and omissions were identified in March and August 1975 and in April, May and June 1976. Inspection report Nos. 50-329/76-04 and 50-330/76-04 identified five noncompliance items regarding reinforcement steel deficiencies.

Licensee response dated June 18, 1976, listed 21 separate items (commitments) for corrective action. A June 24, 1976 letter provided a plan of action schedule for implementing the 21 items. The licensee committed not to resume concrete placement work until the items addressed in licensee's June 24 letter were resolved or implemented. This commitment was documented in a RIII letter to the licensee dated June 25, 1976. Although not stamped as an IAL, in-house memos referred to it as such.

Rebar installation and concrete placement activities were resumed in early July 1976, following completion of the items and verification by RIII.

Additional action taken is as follows:

a. By the NRC

(1) Assignment of an inspector full-time on site for five weeks to observe civil work in progress

(2) IE management meetings with the licensee at their corporate offices

(3) Inspection and evaluation by Headquarter personnel

b. By the Licensee

(1) June 18, 1976 letter committing to 21 items of corrective action

(2) Establishment of an overview inspection program to provide 100% reinspection of embedments by the licensee following acceptance by the contractor QC personnel

c. By the Contractor

(1) Personnel changes and retraining of personnel

(2) Prepared technical evaluation for acceptability of each identified construction deficiency

(3) Improvement in their QA/QC program coverage of civil work (this was imposed by the licensee)

3. Tendon Sheath Placement Errors and Resulting Immediate Action Letter (IAL)

On April 19, 1977, the licensee reported, as a Part 50, Section 50.55(e) item, the inadvertent omission of two hoop tendon sheaths from a Unit 1 containment concrete placement at

elevation 703' - 7". The tendon sheaths were, for the most part, located at an elevation in the next higher concrete placement lift, except that they were diverted to the lower placement lift to pass under a steam line penetration and it was where they were omitted. Failure to rely on the proper source documents by construction and inspection personnel, contributed to the omission.

An IAL was issued to the licensee on April 29, 1977, which spelled out six licensee commitments for correction which included: (1) repairs and cause corrective action; (2) expansion of the licensee's QC over view program; (3) revisions to procedures and training of construction and inspection personnel.

A special QA program inspection was conducted in early May 1977. The inspection team was made up of personnel from RI, RIII, and HQ. Although five items of noncompliance were identified, it was the concensous of the inspectors that the licensee's program was an acceptable program and that the Midland construction activities were comparable to most other construction projects.

The licensee issued its final report on August 12, 1977. Final review on site was conducted and documented in report No. 50-329/77-08.

Current Problems

1. Plant Fill - Diesel Generator Building Settlement

The licensee informed the RIII office on September 8, 1978, of per requirements of 10 CFR 50.55(e) that settlement of the diesel generator foundations and structures were greater than expected.

Fill material in this area was placed between 1975 and 1977, with construction starting on diesel generator building in mid-1977. Filling of the cooling pond began in early 1978 with the spring run-off water. Over the year the water level has increased approximately 21 feet and in turn increasing the site gound water level. It is not known at this time what effect (if any) the higher site ground water level has had on the plan fill and excessive settlement of the Diesel Generator Building. It is interesting to note however that initially the PSAR indicated an underdrain system would be installed to maintain the ground water at its normal (pre pond) level but that it later was deleted.

The NRC activities, to date, include:

a. Transfer of lead responsibility to NRR from IE by memo dated November 17, 1978

b. Site meeting on December 3-4, 1978, between NRR, IE, Consumers Power and Bechtel to discuss the plant fill problem and proposed corrective action relative to the Diesel Generator Building settlement

c. RIII conducted an investigation/inspection relative to the plant fill and Diesel Generator Building settlement

The Constructor/Designer activities include:

a. Issued NCR-1482 (August 21, 1978)

b. Issued Management Corrective Action Report (MCAR) No. 24 (September 7, 1978)

c. Prepared a proposed corrective action option regarding placement of sand overburden surcharge to accelerate and achieve proper compaction of diesel generator building sub soils

Preliminary review of the results of the RIII investigation/ inspection into the plant fill/Diesel Generator Building settlement problem indicate many events occurred between late 1973 and early 1978 which should have alerted Bechtel and the licensee to the pending problem. These events included nonconformance reports, audit findings, field memos to engineering and problems with the administration building fill which caused modification and replacement of the already poured footing and replacement of the fill material with lean concrete.

2. Inspection and Quality Documentation to Establish Acceptability of Equipment

This problem consists of two parts and has just recently been identified by RIII inspectors relative to Midland. The scope and depth of the problem has not been determined.

The first part concerns the adequacy of engineering evaluation of quality documentation (test reports, etc.) to determine if the documentation establishes that the equipment meets specification and environmental requirements. The licensee,

by the licensee's corrective program

on November 13, 1978, issued a construction deficiency report (10 CFR 50.55(e)) relative to this matter. Whether the report was triggered by RIII inspector inquiries for by IE Circular or Bulletin is not known. An interim report dated November 28, 1978 was received and stated Consumers Power was pursuing this matter not only for Bechtel procured equipment but also for NSS supplied equipment.

The second part of the problem concerns the adequacy of equipment acceptance inspection by Bechtel shop inspectors. Examples of this problem include: (1) Decay Heat Removal Pumps released by the shop inspector and shipped to the site with one pump assembled backwards, (2) electrical penetrations inspected and released by the shop inspector for shipment to the site. Site inspections to date indicate about 25% of the vendor wire terminations were improperly crimped.

Inspection History

The construction inspection program for Midland Units 1 and 2 is approximately 50% complete. This is consistent with status of construction of the two units. (Unit 1 - 52%; Unit 2 - 56%) In terms of required inspection procedures approximately 25 have been completed, 33 are in progress and 36 have not been initiated.

The routine inspection program has not identified an unusual number of enforcement items. Of the selected major events described above, only one is directly attributable to RIII enforcement activity (Cadweld splicing). The other were identified by the licensee and reported through the deficiency report system (50.55(e)). The Midland data for 1976 - 78 is tabulated below.

Year	Number of Noncompliances	Number of Inspections	Inspector Hours On Site
1976	14	9	646
1977	5	12	648
1978	11	18	706

A resident inspector was assigned to the Midland site in July 1978. The on site inspection hours shown above does not include his inspection time.

The licensee's QA program has repeatedly been subject to in-depth review by IE inspectors. Included are:

1. July 23-26 and August 8-10, 1973, inspection report Nos. 50-329/73-06 and 50-330/73-06: A detailed review was conducted relative to the implementation of the Consumers Power Company's QA manual and Bechtel Corporation's QA program for design activities at the Bechtel Ann Arbor office. The identified concerns were reported as discrepancies relative to the Part 50, Appendix B, criteria requirements.

2. September 10-11, 1973, report Nos. 50-329/73-08 and 50-330/73-08: A detailed review of the Bechtel Power Corporation QA program for Midland was performed. Noncompliances involving three separate Appendix B criteria with five different examples, were identified.

3. February 6-7, 1974, reports No. 50-329/74-03 and 50-330/74-03: A followup inspection at the licensee's corporate office, relative to the items identified during the September 1973 inspection (above) along with other followup.

4. June 16-17, 1975, report Nos. 50-329/75-05 and 50-330/75-05: Special inspection conducted at the licensee's corporate office to review the new corporate QA program manual.

5. August 9 through September 9, 1976, report Nos. 50-329/76-08 and 50-330/76-08: Special five-week inspection regarding QA program implementation on site primarily for rebar installation and other civil engineering work.

6. May 24-27, 1977, report Nos. 50-329/77-05 and 50-330/77-08: Special inspection conducted at the site by RIII, IE and RI personnel to examine the QA program implementation on site by Consumers Power Company and by Bechtel Corporation. Although five examples of noncompliance to Appendix B, Criterion V, were identified, the consensus of the inspectors involved was that the program and its implementation for Midland was considered to be adequate.

Although the licensee's Quality Assurance program has under gone a number of revisions to strengthen its provisions, no current concern exist regarding its adequacy. Their Topical QA Plan has been reviewed and accepted by NRR through revision 7. Implementation of the program has been and continues to be subject to further review with the mid-construction program review presently scheduled for March or April 1979.

Consumers Power Company expanded their QA/QC auditing and surveillance coverage to provide extensive overview inspection coverage. This began in 1975 with a commitment early in their experience with rebar installation problems and was further committed by the licensee in his letter of June 18, 1976, responding to report Nos. 50-329/76-04 and 50-330/76-04. This overview inspection activity by the licensee has been very effective as a supplement to the constructor's own program. Currently, this program is functioning across all significant activities at the site.

Enforcement History

Approximately 6 months after restart of construction activities (11 months after CP issuance) an inspection identified four noncompliance items regarding cadwelding activities. This resulted in a show cause order being issued on December 3, 1973. This enforcement action was aired publicly during hearings held by the Atomic Safety Licensing Board in May 1974. The hearing board issued its decision in September 1974

that concluded that construction could proceed with adequate assurance of quality.

Identification of reinforcing bar problems began in December of 1974 with the licensee reporting improper spacing of rebar in the Unit 2 containment wall. Further reinforcing bar spacing and/or omission of rebar was identified in August 1975 and again in May 1976 with the citations of 5 noncompliances in an inspection report. An IE:HQ notice of violation was issued regarding the citations in addition to the licensee issuing a stop work order. The licensee issued a response letter dated June 18, 1976 committing to 21 items of corrective action. A Bechtel prepared technical assessment for each instance of rebar deficiency was submitted to and review by IE:HQ who concluded that the structures involved will satisfy the SAR criteria and that the function of these structures will be maintained during all design conditions. The RIII office of NRC performed a special five week inspection to assess the corrective action implementation without further citation.

The licensee reported that two hoop tendon sheaths were omitted in concrete placements of Unit 2 containment wall in April 1977. An Immediate Action Letter was issued to the licensee on April 29, 1977 listing six items of licensee commitments to be completed. A special inspection was performed on May 24-27, 1977 with four NRC inspectors (1-HQ, 1-RI, and 2-RIII). Although five items of noncompliance were identified, it was the consensus of the inspectors that the QA/QC program in effect was adequate. The constructors nonconformance report provided an alternate method of installation for the tendon sheaths that was accepted.

The RIII office of inspection and enforcement instituted an augmented on site inspection coverage program during 1974, this program has continued in effect ever since and is still in effect. It is noted that the noncompliance history with this program is essentially the same as the history of other RIII facilities with a comparable status of construction. Further on site inspection augmentations was accomplished with the assignment of a full time resident inspector in August, 1978.

The noncompliance history for the Midland Project is provided in the following table.

ENFORCEMENT ACTIONS

Noncompliances

Year	# Total	Criteria (10 CFR 50 Appendix B) ( ) Number of Occurrances
1970	4	V, X, XI, XVI
1971-1972	0	Construction haulted pending CP
1973	9	II V(5) XIII, XV, XVII
1974	3	V(2) XVI
1975	0	
1976	10	V(4) X, XII, XV, XVI, XVII, XVIII
1977	5	V(5) 10 CFR 50.55(e) item
1978	11	V(4) VI(2), VII, IX(3), XVI

Criteria

II	QA Program
V	Instructions Procedures Drawing Control Work
VI	Document Control
VII	Control of Purchased Material
IX	Control of Special Processes
X	Inspection
XII	Control Measuring - Test Equipment
XIII	Handling - Storage
XV	Nonconforming Parts
XVI	Corrective Actions
XVII	QA Records
XVIII	Audits

Summary and Conclusions

Since the start of construction Midland has experienced some significant problems resulting in enforcement action. In evaluating these problems they have occurred in clumps: (1) in September 1970 relative to improper placement, sampling and testing of concrete and failure of QA/QC to act on identified deficiencies; (2) in September 1973 relative to drawing control and lack of or inadequate procedures for control of design and procurement activities at the Bechtel Engineering offices; (3) in November 1973 relative to inadequate training, procedures and inspection of cadweld activities; (4) in April, May and June 1976 resulting from a series of RIII in-depth QA inspections and meetings to identify underlying causes of weakness in the Midland QA program implementation relative to embedments. (The noncompliance items identified involved inadequate quality inspection, corrective action, procedures and documentation, all primarily concerned with installation of reinforcement steel); (5) in April 1977 relative to tendon sheath omissions; and (6) in August 1978 concerning plant soil foundations and excessive settlement of the Diesel Generator Building.

Following each of these problem periods (excluding the last which is still under investigation), the licensee has been responsive and has taken extensive action to evaluate and correct the problem and to upgrade his QA program and QA/QC staff. The most effective of these licensee actions has been an overview program which has been steadly expanded to cover almost all safety related activities.

The evaluation both by the licensee and IE of the structures and equipment affected by these problems (again except the last) has established that they fully meet design requirements.

Since 1974 these problems have either been identified by the licensee's quality program or provided direction to our inspectors.

Looking at the underlying causes of these problems two common threads emerge: (1) Consumers Power historically has tended to over rely on Bechtel, and (2) insensitivity on the part of both Bechtel and Consumers Power to recognize the significance of isolated events or failure to adequately evaluate possible generic application of these events either of which would have led to early identification and avoidance of the problem including the last on plant fill and diesel generator building settlement.

Notwithstanding the above, it is our conclusion that the problems experienced are not indicative of a broadbreakdown in the overall quality assurance program. Admittedly, deficiencies have occurred which should have been identified earlier by quality control personnel, but the licensee's program has been effective in the ultimate identification and subsequent correction of these deficiencies. While we cannot dismiss the possibility that problems may have gone undetected by the licensee's overall quality assurance program, our inspection program has not identified significant problems overlooked by the licensee --- and this inspection effort has utilized many different inspectors.

The RIII project inspectors believe that continuation of: (1) resident site coverage, (2) the licensee overview program including its recent expansion into engineering design/review activities, and (3) a continuing inspection program by regional inspectors will provide adequate assurance that construction will be performed in accordance with requirements and that any significant errors and deficiencies will be identified and corrected.

MIDLAND UNITS 1 AND 2

Major Events Ladder

December 5, 1974 - Rebar spacing nonconformance identified for Unit 2 containment by licensee.

March 5 & 10, 1975 - Rebar deficiencies in Auxiliary Building identified by licensee; RIII accepts justification.

April 9, 1975 - Bechtel engineering justification for rebar spacing in Unit 2 containment accepted by RIII. (Report No. 75-03.)

April 16, 1975 - Meeting at Consumers Power Company Corporate office; Hunnicutt, Hayes, and LeDoux relative to rebar spacing in containment and missing rebar in Auxiliary Building.

April 28, 1975 - Unit 2 containment rebar spacing reanalysis accepted.

August 21, 1975 - RIII notified of rebar omitted in Auxiliary Building.

May 4, 1976 - Bechtel conclusion, that missing rebar in Auxiliary Building will not affect integrity, referred to Headquarters; Hayes to Seyfrit.

June 7 & 8, 1976 - Meeting, Consumers Power Company, Jackson; Keppler and others vs Selby and others relative to missing rebar in Auxiliary Building and QA deficiencies per Report No. 76-04.

June 18 & 24, 1976 - Licensee letters of response committing to 21 items of corrective action in response to Report No. 76-04.

June 25, 1976 - Keppler to Consumers Power Company; Immediate Action Letter per Jordan to Keppler memo 8/26/76.

July 14, 1976 - IE concurred with the Bechtel conclusion regarding missing rebar in Auxiliary Building, Seyfrit to Hunnicutt.

July 28, 1976 - PN-III-76-52 issued on concrete work stoppage due to further rebar placement errors found as a result of Consumers' overview program instigated in late June 1976.

August 2, 1976 - Keppler letter to Headquarters recommending Headquarters' Notice of Violation be issued. Notice sent 8/13/76.

October 29, 1976 - Consumers Power Company responded to Headquarters' Notice of Violations.

November 30, 1976 - Hearings take place on environmental matters. Completed in January 1977.

December 10, 1976 - Consumers Power Company's [illegible] Program accepted by NRR.

*July 1977 - Staff commenced responding on Consumers Power Company's Regulatory Guide use.

February 26, 1977 - Bulge occurrence of Unit 2 containment liner discovered - reported on February 28, 1977.

April 14, 1977 - Meeting, Ann Arbor, to review activities of bulged liner plate repair.

April 19, 1977 - Tendon sheath omission of Unit 1 reported.

April 29, 1977 - Immediate Action Letter issued relative to tendon sheath placement errors.

*See backup information on Regulatory Guides.

May 5, 1977	- Meeting, Consumers Power Company, Jackson; Keppler, Heishman, and Hayes relative to Immediate Action Letter discussion regarding tendon sheath problem.
May 24 - 27, 1977	- Special QA inspection to determine adequacy of QA program implementation at Midland.
June 30, 1977	- Meeting, Ann Arbor; R. F. Heishman and R. E. Shewmaker; release to proceed for tendon sheath omission and for bulge repair.
August 1 - 5 & 8 - 9, 1977	- Site inspection to witness start of repairs for bulge liner and review records of completion of tendon sheath.
August 12, 1977	- Final 50.55(e) report on tendon sheath.
August 15, 1977	- Final report on liner plate repair.

REBAR OMISSION PROBLEM

Inspection Report File Information

12/5/74 - CP identified rebar spacing noncompliance for Unit 2 containment wall. Issued QF-36 and stop-work FSW-6 December 6, 1974. Inspection conducted on December 11 - 13, 1974. Inspection Report No. 74-11.

2/5-7/75 - Inspection Report No. 75-01

More information requested for stress analysis for the rebar spacing of December 5, 1974. Tentative submittal March 15, 1975. NRC refuted existing analytical work.

2/26/75 - Inspection Report No. 75-02

NRC reviewed stress analysis on rebar spacing nonconformance. NRC refuted (CP agreed with NRC) analysis. Another analysis report due March 28, 1975.

4/8-9/75 - Inspection Report No. 75-03

NRC accepts Bechtel engineering justification. Resolves rebar spacing of December 5, 1974 for rebar in Unit 2 containment. Auxiliazry Building rebar deviations - found by CP on March 5 and 10, 1975. NRC accepts the licensee computations.

10/23-24/75 - Inspection Report No. 75-07

August 21, 1975, NRC notified of rebar not installed in Auxiliary Building. NRC accepts CP analysis.

4/19-21, 5/3, 6-7, 13-14, and 20, 6/7-8/76 - Inspection Report No. 76-04

Bechtel concluded missing rebar in Auxiliary Building will not affect integrity. Referred to Headquarters.

QA inspection: Licensee letter June 18, 1976; licensee letter June 24, 1976.

Inspection Report No. 76-05 states revised and new work

LICENSEE EVENT REPORT

CONTROL BLOCK: [ ]

LICENSEE NAME: [0][0][D][B][S][1] | LICENSE NUMBER: [0][0][0][0][P][F][-][0][3] | LICENSE TYPE: [4][1][1][1][1] | EVENT TYPE: [0][3]

CATEGORY: [0] | REPORT TYPE: [L] | REPORT SOURCE: [L] | DOCKET NUMBER: [0][5][0][-][0][3][0][6] | EVENT DATE: [0][7][3][1][7][7] | REPORT DATE: [0][8][2][5][7][7]

EVENT DESCRIPTION

Emergency Ventilation System 1-1 inoperable due to incorrect setpoint on controller and differencial pressure transmitter inoperable. The controller setpoint was immediately corrected and pressure transmitter returned to operability after investigation found the atmospheric vent taped over. (NP-33-77-34)

SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
S C	A	Z Z Z Z Z Z	Z	Z Z Z Z	N

CAUSE DESCRIPTION

The pressure controller was set to the incorrect setpoint by unknown personnel. The atmospheric vent had been taped over during the construction painting of the outside walls of the Auxiliary Building.

FACILITY STATUS	POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
B	0 0 0	NA	A	NA

FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
Z	Z	NA	NA

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION
0 0 0	Z	NA

PERSONNEL INJURIES

NUMBER	DESCRIPTION
0 0 0	NA

OFFSITE CONSEQUENCES

NA

LOSS OR DAMAGE TO FACILITY

TYPE	DESCRIPTION
Z	NA

PUBLICITY

NA

ADDITIONAL FACTORS

NA

NAME: Jacque Lingenfelter / Tom George (419) 259-5000, Ext. 251

July 14, 1976 - IE concurred with the Bechtel conclusion regarding missing rebar in Auxiliary Building, Seyfrit to Hunnicutt.

July 28, 1976 - PN-III-76-52 issued on concrete work stoppage due to further rebar placement errors found as a result of Consumers' overview program instigated in late June 1976.

August 2, 1976 - Keppler letter to Headquarters recommending Headquarters' Notice of Violation be issued. Notice sent 8/13/76

October 29, 1976 - Consumers Power Company responded to Headquarters' Notice of Violations.

November 30, 1976 - Hearings take place on environmental matters. Completed in January 1977.

December 10, 1976 - Consumers Power Company's [illegible] Program accepted by NRR.

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February 26, 1977 - Bulge occurrence of Unit 2 containment liner discovered - reported on February 28, 1977.

April 14, 1977 - Meeting, Ann Arbor, to review activities of bulged liner plate repair.

April 19, 1977 - Tendon sheath omission of Unit 1 reported.

April 29, 1977 - Immediate Action Letter issued relative to tendon sheath placement errors.

*See backup information on Regulatory Guides.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5242

Docket No. 50-346
License No. NPF-3

August 25, 1977

Serial No. 371

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reportable Occurrence NP-33-77-34
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: July 31, 1977

Enclosed find three copies of Licensee Event Report NP-33-77-34 with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 30 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 30 copies Licensee Event Report
30 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet

AUG 29 1977

May 5, 1977	- Meeting, Consumers Power Company, Jackson; Keppler, Heishman, and Hayes relative to Immediate Action Letter discussion regarding tendon sheath problem.
May 24 - 27, 1977	- Special QA inspection to determine adequacy of QA program implementation at Midland.
June 30, 1977	- Meeting, Ann Arbor; R. F. Heishman and R. E. Shewmaker; release to proceed for tendon sheath omission and for bulge repair.
August 1 - 5 & 8 - 9, 1977	- Site inspection to witness start of repairs for bulge liner and review records of completion of tendon sheath.
August 12, 1977	- Final 50.55(e) report on tendon sheath.
August 15, 1977	- Final report on liner plate repair.

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-28

DATE OF EVENT: July 29, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Removed High Pressure Injection Line 1-2 from Service to perform hydrostatic test

Conditions Prior to Occurrence: The plant was in Mode 3, with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: In October, 1976, it was discovered that the welded stellite seat was cracked in one of the four High Pressure Injection (HPI) Line Stop Check Valves, HP49. The valve was replaced in February, 1977, with a new stop check valve which required a complete reweld to install the new body. Since welding had been performed on the piping, a hydrostatic test on that section of pipe had to be completed. Since there are no isolatable boundaries between HP49 and the Reactor Coolant System (R.C.S.), the hydrostatic test had to be delayed until the Reactor Coolant System was pressurized. At 1100 hours on July 29, 1977, with the R.C.S. pressurized to 2120 PSIG, HP49 was hydro tested. This required removing power from injection valve HP2D rendering one of the two flow paths for HPI Pump 1-1 inoperable. At this time the plant was in Mode 3 for which Technical Specification 3.5.2 required entry into an action statement if either HPI Pump is inoperable. At 1630 hours on July 29, 1977, the hydro test was completed and power restored to HPI Valve HP2D. This removed the Station from the action statement of Technical Specification 3.5.2.

Designation of Apparent Cause of Occurrence: The cause of this event was deliberately entering an action statement to perform the required hydrostatic test.

Analysis of Occurrence: Since HPI Pump 1-2 was operable and only one of the two HPI Pump 1-1 Injection Valves was inoperable, H.P.I. would be supplied if needed under accident conditions; therefore, no threat occurred to the health and safety of the public or to Station personnel.

Corrective Action: The hydrostatic test was completed and power restored to the High Pressure Injection Valve, HP2D, by 1630 hours on July 29, 1977.

Failure Data: No previous similar events have occurred.

LICENSEE EVENT REPORT

CONTROL BLOCK

LICENSEE NAME	LICENSE NUMBER	LICENSE TYPE	EVENT TYPE
OHDBS1	Ø Ø - Ø Ø N F F - Ø 3	4 1 1 1 1	Ø 1

CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
CON'T	T	L	Ø 5 Ø - Ø 3 4 6	Ø 8 1 5 7 7	Ø 8 2 6 7 7

EVENT DESCRIPTION

Battery electrolyte level was above the maximum acceptable level for Station Batteries 1P, 1N, 2P and 2N. This placed the station in violation of Technical Specification 3.8.2.4. (NP-32-77-13)

SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
EC	B	BATTRY	A	G185	Y

CAUSE DESCRIPTION

With the electrolyte at maximum level (per manufacturer's instructions), and the batteries on equalize, the level exceeded the maximum allowed.

FACILITY STATUS	POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
B	Ø Ø Ø	NA	B	NA

FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
Z	Z	NA	NA

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION
Ø Ø Ø	Z	NA

PERSONNEL INJURIES

NUMBER	DESCRIPTION
Ø Ø Ø	NA

OFFSITE CONSEQUENCES

NA

LOSS OR DAMAGE TO FACILITY

TYPE	DESCRIPTION
Z	NA

PUBLICITY

NA

ADDITIONAL FACTORS

NA

NAME Jacque Lingenfelter/ Dick Brown PHONE (419) 259-5000, Ext. 251

DVR 098-1

REBAR OMISSION PROBLEM

Inspection Report File Information

12/5/74 - CP identified rebar spacing noncompliance for Unit 2 containment wall. Issued QF-36 and stop-work FSW-6 December 6, 1974. Inspection conducted on December 11 - 13, 1974. Inspection Report No. 74-11.

2/5-7/75 - Inspection Report No. 75-01

More information requested for stress analysis for the rebar spacing of December 5, 1974. Tentative submittal March 15, 1975. NRC refuted existing analytical work.

2/26/75 - Inspection Report No. 75-02

NRC reviewed stress analysis on rebar spacing nonconformance. NRC refuted (CP agreed with NRC) analysis. Another analysis report due March 28, 1975.

4/8-9/75 - Inspection Report No. 75-03

NRC accepts Bechtel engineering justification. Resolves rebar spacing of December 5, 1974 for rebar in Unit 2 containment. Auxiliazry Building rebar deviations - found by CP on March 5 and 10, 1975. NRC accepts the licensee computations.

10/23-24/75 - Inspection Report No. 75-07

August 21, 1975, NRC notified of rebar not installed in Auxiliary Building. NRC accepts CP analysis.

4/19-21, 5/3, 6-7, 13-14, and 20, 6/7-8/76 - Inspection Report No. 76-04

Bechtel concluded missing rebar in Auxiliary Building will not affect integrity. Referred to Headquarters.

QA inspection: Licensee letter June 18, 1976; licensee letter June 24, 1976.

Inspection Report No. 76-05 states revised and new work

procedures for concrete placement acceptable. Covered under licensee letter of June 24, 1976, under "Activities to be Completed Prior to Resumption of Q-Listed Concrete Placement."

6/24, 25, 30 and 7/1/76 - Inspection Report No. 76-05

IE:HQ did not identify any deficiency with Auxiliary Building rebar omissions.

Bechtel trend analysis not accepted by NRC - found acceptable in 76-09 dated November 1976. November 16 - 19, 1976, Bechtel trend analysis accepted by NRC.

8/9 - 9/9 and 23/76 - Inspection Report No. 76-08

Completes same licensee commitments from 76-04.

11/16-19/76 - Inspection Report No. 76-09

Inspector review of "Bechtel Trend Analysis" was found to be acceptable and considered resolved.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Develop
(419) 259-5242

Docket No. 50-346
License No. NPF-3

August 26, 1977

Serial No. 373

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear ~~Mr.~~ Keppler:

Reportable Occurrence NP-32-77-13
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: August 15, 1977

Enclosed find three copies of Licensee Event Report NP-32-77-13 with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 14 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 40 copies Licensee Event Report
40 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet
2 copies Telecopied Report

SEP 1 1977

LETTER FILE

12/5/74 - CP quality assurance coordination found rebar spacing out of specification on containment wall of unit 2.

12/6/74 - Stop-work order issued by CP.

12/11-13/74 - Site inspection.

6/10/75 - Meeting by Mr. Yin with Mr. Slager, CP staff. Meeting held in RIII offices to review unresolved and/or open items from RIII inspection reports from 1970 to present.

11/18/75 - Meeting at Headquarters between RIII, IE, and CP to discuss implementation of Regulatory Guides 1.20, 1.26, 1.29, 1.46, 1.48, 1.67, and 1.72.

2/4/76 - Meeting scheduled for 2/4/76 between RIII, IE, and CP. Meeting to review noncompliance items and unresolved items identified during RIII inspection of 1/14-16/76.

Infractions:

1. No assurance temperature limits were exceeded on concrete pours.
2. No measures to identify nonconforming aggregate.
3. Nonconforming aggregate not idsposed of as required.

2/4/76 - Meeting at CP corporate offices between CP, Hunnicutt, and Hayes. The meeting reviewed noncompliance and unresolved items from January 13 - 16, 1976 (Inspection Report No. 76-01). Meeting discussed effectiveness of QA/QC effectiveness. Licensee responded with letter of March 5, 1976.

4/28/75 - Memo of Yin to file. Yin review of BAPC report claims that rebar spacing problem in Unit 2 containment is considered resolved.

March 5, 1975 \
March 10, 1975 / CP notifies NRC of missing rebar in Auxiliary Building.

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-46

DATE OF EVENT: August 3, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Auxiliary Feedwater Pump 1-2 did not start on a loss of feedwater trip on Steam Generator 1-1.

Conditions Prior to Occurrence: The plant was in Mode 3 with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: At 2338 hours on August 3, 1977, while running TP 600.11, (Auxiliary Feedwater System and Once Thru Steam Generator Level Control Test), a trip signal from the Steam Generator 1 loss of feedwater circuitry was received which should have started the 1-2 Auxiliary Feed Pump (AFP). The 1-1 AFP was already running but 1-2 AFP did not start. AFP 1-2 was, therefore, inoperable which placed the unit in the Action Statement of Technical Specification 3.7.1.2.

The investigation found that the governor valve had been stepped on and was completely closed. The steam supply valve upst eam from the governor valve opened allowing steam to come down against the closed governor valve, but the completely closed valve would not allow the turbine to roll and provide its own oil pressure to open the valve. At 0010 hours on August 4, 1977, when Auxiliary Feed Pump Turbine 1-2 governor valve was manually opened, AFPT 1-2 was returned to operability.

Designation of Apparent Cause of Occurrence: There were several groups working in the area of the AFPT 1-2 governor valve and any one of the workers could have stepped on or leaned on the governor valve to close it. Other workers had previously been observed standing on the governor valve and were instructed at that time to use care when working in this area.

Analysis of Occurrence: There was not a threat to the health and safety of the public or to station staff. Auxiliary Feed Pump 1-1 was operable, initial criticality had not been reached, and no accident requiring the Auxiliary Feed Pumps occurred.

Corrective Action: The valve was manually opened and all personnel working in the room were instructed not to stand or lean on the AFPT governor valves. The Control Room Operator has been instructed to monitor the high speed stop light once per hour. As work in this room has been greatly reduced, this occurrence is not expected to re-occur.

Failure Data: On July 27, 1977, both Auxiliary Feedwater Systems were inoperable (NP-32-77-11). On July 29, 1977, Auxiliary Feed Pump Turbine 1-1 was inoperable (NP-33-77-42). On August 2, 1977, both Auxiliary Feed Pumps were inoperable (NP-33-77-39). The cause of these occurrences, however, was not related to the governor valve closure.

Letter April 16, 1975, Keppler-CP. Refers to meeting at CP corporate office with Hunnicutt, Hayes, and LeDoux. Meeting to discuss rebar spacing in Unit 2 containment and missing rebar in Auxiliary Building. CP committed to:

1. Complete safety evaluation and engineering review for rebar spacing discrepancy.
2. Continue review of safety implications and reportability considerations for missing rebar.
3. Complete formulation and implementation of corrective measures.

2/26/75 - Inspection at BAPC, Ann Arbor. NRC refuted analysis. On April 28, 1975 (Yin memo) analysis accepted.

3/16-18, 24-26/76 - Inspection Report No. 76-02

Addresses continued rebar omission. Discussed with D. W. Hayes on April 13, 1976. Report letter dated April 20, 1976.

Letter, March 5, 1976, CP-Keppler

Responds to citations of inspection of January 13 - 16, 1976.

Citation: Concrete temperature, aggregate control, and disposal of aggregate.

May 4, 1976, Memo Hayes to Seyfrit

Refers to Headquarters for review and evaluation of missing/misplaced rebar for periods of 2/76, 3/76, 10/74, 7/74 ----

May 20, 1976 - Scheduled meeting at Jackson CP corporate offices to discuss noncompliance of April 19 - May 20, 1976 inspection (Report No. 76-04).

LICENSEE EVENT REPORT

CONTROL BLOCK [ ]

LICENSEE NAME: [0][0][D][E][S][1] — LICENSE NUMBER: [0][0][0][0][0][0][F][-][0][3] — LICENSE TYPE: [4][1] — EVENT TYPE: [0][3]

CATEGORY: [0][1] — REPORT TYPE: [L] — REPORT SOURCE: [L] — DOCKET NUMBER: [0][5][0][-][0][3][4][6] — EVENT DATE: [0][8][0][3][7][7] — REPORT DATE: [ ][ ][ ][ ][ ][ ]

CON'T [ ][ ]

EVENT DESCRIPTION

[0][7] Auxiliary Feedwater Pump 1-2 did not start on a Loss of Feedwater trip on
[0][8] Steam Generator 1-1. A governor valve was found completely closed, which
[0][9] prevented the turbine from rolling to provide oil pressure to open the
[0][A] valve. (NP-33-77-46)
[0][B]

SYSTEM CODE: [C][H] — CAUSE CODE: [A] — COMPONENT CODE: [V][A][L][V][E][X] — PRIME COMPONENT SUPPLIER: [Z] — COMPONENT MANUFACTURER: [Z][Z][Z][Z] — VIOLATION: [N]

CAUSE DESCRIPTION

[0][E] It is suspected that one of the groups working in the area at the time
[0][F] closed the valve.
[1][0]

FACILITY STATUS: [B] — % POWER: [0][0][0] — OTHER STATUS: NA — METHOD OF DISCOVERY: [A] — DISCOVERY DESCRIPTION: NA

FORM OF ACTIVITY RELEASED: [Z] — CONTENT OF RELEASE: [Z] — AMOUNT OF ACTIVITY: NA — LOCATION OF RELEASE: NA

PERSONNEL EXPOSURES

NUMBER: [0][0][0] — TYPE: [Z] — DESCRIPTION: NA

PERSONNEL INJURIES

NUMBER: [0][0][0] — DESCRIPTION: NA

OFFSITE CONSEQUENCES

NA

LOSS OR DAMAGE TO FACILITY

TYPE: [Z] — DESCRIPTION: NA

PUBLICITY

NA

ADDITIONAL FACTORS

NA

NAME: Jacque Lingenfelter/ Rich Chenko — PHONE: (412) 259-3000, Ext. [illegible]

6/8/76 - CP issued stop-work order for placement of safety-related concrete. Referenced in NRC letter (Keppler) to CP dated June 25, 1976.

6/18/76 - CP response letter to inspection findings of April - May 1976 (Inspection Report No. 76-04) 20 items.

6/24/76 - CP response letter relative to schedule for plan of action for items of June 18, 1976 CP letter.

6/25/76 - Letter, Keppler to CP. States resumption of concrete placement for safety-related structure will not start until certain items addressed in CP letter of June 24, 1976 are resolved. Memo, Jordan to Keppler, dated 8/26/76 refers to this as Immediate Action Letter.

7/14/76 - Memo, Seyfrit to Hunnicutt. Response to Hayes's memo of May 4, 1976, as a result of Yin-Shewmaker inspection of June 24 and 25, 1976. The strength considerations for missing/misplaced rebar is considered resolved.

7/27/76 - RIII informed by CP that:

Concrete work stopped because of errors in placing rebar.

PN-III-76-52 filed on July 28, 1976, states work stopped also in June 1976 and on three earlier occasions.

Rebar placement error of July 1, 1976, was in Auxiliary Building.

8/2/76 - Keppler letter to Thompson recommending Headquarters' Notice of Violation. Notice sent August 13, 1976.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5242

Docket No. 50-346
License No. NPF-3

August 29, 1977

Serial No. 377

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinios 60137

Dear Mr. Keppler:

Reportable Occurrence NP-33-77-46
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: August 3, 1977

Enclosed find three copies of Licensee Event Report NP-33-77-46 with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 30 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 30 copies Licensee Event Report
30 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet

SEP 2 1977

6/7 & 8/76 - (and May 20, 1976) meeting at CP corporate offices. Meeting involved Selby and other and Keppler and others.

10/18/76 - Hearing date set for November 16, 1976. Rescheduled later (11/18/76 to 11/30/76). Environmental.

8/13/76 - Notice of Violation issued to CP (Selby).

10/29/76 - CP response to Notice of Violation.

12/8/76 - Notice to resume Midland hearing on December 14, 1976.

12/16/76 - 50.55(e) on deformed (defective) component cooling water pump casings.

12/29/76 - Notice of resuming Midland hearing on January 8, 1977, in Chicago, Illinois.

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-42

DATE OF EVENT: July 29, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Auxiliary Feed Pump Turbine (AFPT) 1-1 Main Steam Supply Line Check Valve (MS734) bonnet leak

Conditions Prior to Occurrence: The plant was in Mode 3, with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: At 1100 hours on July 29, 1977 while Operations personnel were running Surveillance Test (ST 5071.01) "Auxiliary Feedwater Monthly Test", Main Steam Supply Line Check Valve MS734 was discovered to have steam leaking around the bonnet. The Maintenance Department was immediately notified and steam to AFPT 1-1 was secured so Maintenance personnel could repair MS734. While repairs on MS734 were underway, Maintenance personnel also made some governor adjustments. AFPT 1-1 was therefore inoperable which places the Station in the Action Statement of Technical Specification 3.7.1.2. At 1945 hours on July 29, 1977, the Surveillance Test (ST 5071.01) was completed and AFPT 1-1 was declared operable.

Designation of Apparent Cause of Occurrence: Gasket on bonnet failed due to relaxation of bonnet bolts. Four out of the eight bolts were found to be only finger tight. The exact cause of this relaxation is not known.

Analysis of Occurrence: Since AFPT 1-2 was operable at the time and the Reactor had not yet reached initial criticality, there was no danger to the health and safety of the public or Station personnel.

Corrective Action: The leaky valve bonnet was repaired by replacing the bonnet gasket with a new one and AFPT 1-1 was returned to operable status at 1945 hours on July 29, 1977, removing the Station from the Action Statement of Technical Specification 3.7.1.2.

Failure Data: On July 27, 1977, both Auxiliary Feedwater Systems were inoperable (LER NP-33-77-41).

REGULATORY GUIDES

Backup File - 1975

2/12/75 - J. G. Davis letter CP: acknowledge receipt of Consumers' report on reinforcing bar spacing (50.55(e)). Control No. H00419F3.

5/19/75 - Letter: S. H. Howell to A. Giambusso. First quarter '75 Financial Report. Page 3: QC/QA activities remain unchanged-curtailment of construction activities.

6/13/75 - NRC Schedule.

7/3/75 - Letter, R. C. Bauman (CP) to A. Schwencer. References meeting of June 24, 1975 between NRC and CP to discuss applicability of Regulatory Guides through Regulatory Guide 1.75 at Midland. List of Regulatory Guides having some disparity with Midland construction.

7/24/75 - Letter, Bauman to Giambusso. Refers to NRC-CP meeting of 7/22/75. Implementation of QA Regulatory Guides at Midland.

10/2/75 - Letter, Bauman to Boyd (NRC). Refers to tentative meeting on Materials Engineering Regulatory Guide 1.31. States Midland position.

10/14/75 - Letter, Cooke to Keppler, NRC Schedule.

11/14/75 - Letter, A. Schwencer to CP addressing additional loads on vessel support system. NRC investigating but indicate present design may be adequate.

11/7/75 - Letter, Bauman to NRR (Boyd). Midland position on Regulatory Guides 1.1, 1.4, 1.7, 1.13, 1.25, 1.42, 1.49, 1.52, 1.54, and 1.70.

11/14/75 - Letter, Cooke to Keppler. NRC Schedule.

11/19/75 - Letter, Schwencer to CP. NRC staff position on Regulatory Gu... implementation at Midland. Refers CP letter of 9/11/75.

LICENSEE EVENT REPORT

CONTROL BLOCK [ ]

LICENSEE NAME: ODEDS1 | LICENSE NUMBER: 00-00NPF-03 | LICENSE TYPE: 4111 | EVENT TYPE: 03

CATEGORY: 1 | REPORT TYPE: L | REPORT SOURCE: L | DOCKET NUMBER: 050-00346 | EVENT DATE: 072977 | REPORT DATE: 082377

EVENT DESCRIPTION

Auxiliary Feed Pump Turbine 1-1 Main Steam Supply Line Check Valve (MS734) bonnet leaked. The Station was placed in the Action Statement of Technical Specification 3.7.1.2. (NP-33-77-42)

SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
CC	F	VALVEX	Z	ZZZZ	N

CAUSE DESCRIPTION

Bolts were not tightened on the valve bonnet gasket, causing steam leakage.

FACILITY STATUS	POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
B	000	NA	B	NA

FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
Z	Z	NA	NA

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION
000	Z	NA

PERSONNEL INJURIES

NUMBER	DESCRIPTION
000	NA

OFF SITE CONSEQUENCES

NA

LOSS OR DAMAGE TO FACILITY

TYPE	DESCRIPTION
Z	NA

PUBLICITY

NA

ADDITIONAL FACTORS

NA

NAME Jacque Lingenfelter/Rich Chesko PHONE (419) 259-5000, Ext. 231

12/1/75 - Letter, Bauman to NRR (Boyd). Midland position and information to NRR on use of Regulatory Guides.

12/11/75 - Letter, Bauman to NRR (Boyd). Refers Schwencer's letter of 11/14/75. Supplies additional supporting information to vessel support system.

12/17/75 - Letter, Bauman to NRR (Boyd). Supplies additional information in response to Schwencer's letter of 11/19/75 on Regulatory Guide implementation and procurement status of plant components.

7/21/75 - Letter, Bauman to Schwencer (NRC). CP position on Regulatory Guide use. Refers to meeting of July 22, 1975.

8/8/75 - Letter, Howell to Giambusso. Financial status. No QC/QC changes. Indicates tentative change of personnel: Keeley as Midland Project Manager replaces Kessler; F. Southworth named Director of QA Services. Both effective August 1, 1975.

10/10/75 - Letter, Bauman to NRR (Boyd). Information on Midland Regulatory Guide positions. Refers to tentative Regulatory Guide meeting of 11/13/75.

10/15/75 - Letter, Bauman to NRR (Boyd). CP position on Regulatory Guide use at Midland.

11/10/75 - Letter, Howell to Giambusso. Financial report plus no change to QC/QA. Indicates construction escalation on January 1976.

1/13/76 - Letter, Schwencer to CP. Comments and request for information for use of Regulatory Guides at Midland. Refers letter, CP to NRR of 11/7/75.

1/13/76 - Letter, Schwencer to CP. Request for information on Regulatory Guide use at Midland. Refers to letter CP to NRR dated 10/10/75.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5242

Docket No. 50-346
License No. NPF-3

August 23, 1977

Serial No. 366

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reportable Occurrence NP-33-77-42
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: July 29, 1977

Enclosed find three copies of Licensee Event Report NP-33-77-42, with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 30 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 30 copies Licensee Event Report
30 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet

AUG 29 1977

1/26/76 - Letter, Schwencer to CP. NRC comments and request for information on use of Regulatory Guides 1.26, 1.20, and 1.94.

2/3/76 - Letter, Bauman to NRR (Boyd). Supplies information requested in Schwencer's letter dated 12/23/75 pertaining to Regulatory Guide use - electrical engineering.

2/3/76 - Letter, Bauman to NRR (Boyd). Supplies information requested in Schwencer's letter dated 10/30/75 on use of Regulatory Guide 1.59.

2/3/76 - Letter, Bauman to NRR (Boyd). Responds to Schwencer's letter dated 1/13/76 and supplies additional inforamtion on use of Regulatory Guides.

2/5/76 - Letter, Bauman to NRR (Boyd). Responds to Schwencer's letter dated 1/26/76 requesting information on use of Regulatory Guides 1.26 and 1.29.

2/10/76 - Letter, Bauman to NRR (Boyd). Final response to Schwencer's letter dated 1/26/76 requesting information on use of Regulatory Guide 1.94.

3/23/76 - Letter, Kneil (NRC) to CP announcing meeting at RIII March 30, 1976, on Section V.B of Appendix I, 10 CFR 50. Also, letter, Kneil to CP dated 4/23/76. Also, letter, Kneil to CP dated 5/10/76. Also, letter, Howell to NRR dated 3/15/77.

3/2/76 - Letter, Howell to Rusche requesting relief from Quarterly Financial Reports established in Giambusso letter of September 13, 1974.

5/3/76 - Letter, Boyd to CP. Relieves CP of Quarterly Financial Report and conditions of Giambusso letter of September 13, 1974.

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-44

DATE OF EVENT: July 29, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Indication variation on two Steam Generator level transmitters (LT-SP9A6 and LT-SP9A7) was greater than the allowed differential tolerance of 10 inches

Conditions Prior to Occurrence: The plant was in Mode 3, with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: At 0930 hours on July 29, 1977, Instrument and Control personnel were calibrating and repairing tubing leaks on one Steam Generator level transmitter at a time (LT-SP9A6, 9A7 and 9B9). Each transmitter was restored to service within 1 hour. At 1045 hours while performing ST 5099.01, Miscellaneous Instrument Shift Checks, 2 Steam Generator level transmitter indications on LT-SP9A6 and LT-SP9A7 were greater than the allowed differential tolerance of 10 inches. This placed the unit in the Action Statement of Technical Specification 3.3.2.2.(b).

Designation of Apparent Cause of Occurrence: After a Maintenance Work Order was issued, it was discovered that the vent valves on the transmitter body were leaking causing a loss of level indication in the Control Room. The vent valves were never properly tightened during the calibration.

Analysis of Occurrence: Since the indications never went out of the tolerance that would require a manual trip of the Steam and Feedwater Rupture Control System Channel, the Channel remained operable and there was no threat to the health and safety of the public or Station personnel.

Corrective Action: SFRCS level indicators were monitored closely to determine if any of the channels must be tripped as per Action Statement #13 of Table 3.3-11. The vent valves were tightened to stop the leaks and Steam Generator level indication was returned to normal. Investigation of this problem is continuing with the vendor (Rosemont).

Failure Data: Steam Generator level was inoperable on one prior event (NP-33-77-22), but the cause of the event was a deficient design in the power supplies.

6/14/76 - Letter, Kneil to CP. Staff position on use of Regulatory Guides 1.10, 1.12, 1.15, 1.18, 1.19, 1.35, 1.60, 1.61, and 1.92. (Regulatory Guides 1.27, 1.55, and 1.59 excluded.) Refers to CP letters of 7/21/75, 8/19/75, 12/1/75, and 2/3/76.

7/14/76 - Letter, Vassallo (NRR) to CP. Letter requires CP do a reevaluation of vessel support systems for LOCA conditions.

10/8/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.28, 1.30, 1.37, 1.38, 1.39, 1.58, 1.64, 1.74, 1.88, and 1.94 covered in CP of October 15, 1975. Also, staff position on use of Regulatory Guides 1.54 and 1.55 covered in CP letters of November 7, 1975 and August 19, 1975.

10/8/76 - Letter, Varga to CP. Staff position - partial response to CP letter of October 10, 1975, for use of Regulatory Guides 1.20, 1.26, 1.29, 1.46, 1.48, and 1.67.

10/15/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.6, 1.9, 1.11, 1.22, 1.32, 1.40, 1.41, 1.45, 1.47, 1.53, 1.62, 1.63, 1.73, 1.75, and 1.81. Regulatory Guide 1.12 addressed in NRC letter of June 8, 1976. Refers to CP letters of July 21, 1975 and February 3, 1976.

10/12/76 - Letter, Varga to CP. Staff position on use of Regulatory Guides 1.1. 1.4, 1.7, 1.13, 1.25, 1.27, 1.42, 1.49, 1.52, and 1.59. (Excludes 1.54.) Refers to CP letters of August 19, 1975, November 7, 1975, and February 3, 1976. Staff position on Regulatory Guide 1.70 covered in NRC letter of June 2, 1976.

LICENSEE EVENT REPORT

CONTROL BLOCK [ ]

LICENSEE NAME: OHBS1 | LICENSE NUMBER: 00-0013 | LICENSE TYPE: 4111 | EVENT TYPE: 03

CATEGORY: 1 | REPORT TYPE: L | REPORT SOURCE: L | DOCKET NUMBER: 050-0346 | EVENT DATE: 07/29/77 | REPORT DATE: 08/31/77

CONT

EVENT DESCRIPTION:

Indication variation on two Steam Generator level transmitters (LT-SP9A6 and LT-SP9A7) was greater than the allowed differential tolerance of 10 inches. (NP-33-77-44)

SYSTEM CODE: CH | CAUSE CODE: F | COMPONENT CODE: VALVEX | PRIME COMPONENT SUPPLIER: Z | COMPONENT MANUFACTURER: ZZZZ | VIOLATION: N

CAUSE DESCRIPTION:

Leaking vent valves on the transmitter body caused a loss of level indication. They were not properly tightened during calibration.

FACILITY STATUS: B | % POWER: 000 | OTHER STATUS: NA | METHOD OF DISCOVERY: B | DISCOVERY DESCRIPTION: NA

FORM OF ACTIVITY RELEASED: Z | CONTENT OF RELEASE: Z | AMOUNT OF ACTIVITY: NA | LOCATION OF RELEASE: NA

PERSONNEL EXPOSURES: NUMBER: 000 | TYPE: Z | DESCRIPTION: NA

PERSONNEL INJURIES: NUMBER: 000 | DESCRIPTION: NA

OFFSITE CONSEQUENCES: NA

LOSS OR DAMAGE TO FACILITY: TYPE: Z | DESCRIPTION: NA

PUBLICITY: NA

ADDITIONAL FACTORS: NA

NAME: Jacque Lingenfelter/Tom George PHONE: (419) 259-5000, Ext. 252

12/10/76 - Letter, Varga to CP accepts Midland Design and Construction QA Program (10 CFR 50, Appendix A). Submitted to NRC by CP on 11/9/76.

1/5/77 - Letter, Howell to Vassallio (NRR). Vessel support analysis due 4/77. References letters of NRR-CP, 7/14/76, and CP to NRR, 9/10/76.

3/15/77 - Letter, Howell to NRR (Boyd). Additional information on Appendix I. Refers to backup information on 3/23/76.

4/29/77 - Letter, Howell to Vassallio. Vessel support analysis due 7/77. Reference 1/5/77 and 6/8/77.

6/27/77 - Letter Howell to NRR (Boyd). Clarification of PSAR Amendment 32 dated 4/4/77. Electrical penetration information.

7/19/77 - Letter, Howell to NRR (Boyd). Addresses CP position on use of Regulatory Guides 1.10, 1.12, 1.15, 1.18, 1.19, 1.35, 1.57, 1.60, 1.61, 1.90, and 1.92. Refers NRC letter of 6/8/76. GIVES SUMMARY STATUS OF REGULATORY GUIDE USE FOR STRUCTURAL ENGINEERING.

7/19/77 - Letter, Howell to NRR (Boyd). Addresses CP position on use of Regulatory Guides 1.6, 1.9, 1.11, 1.22, 1.32, 1.40, 1.41, 1.45, 1.47, 1.53, 1.62, 1.63, 1.73, 1.75, and 1.81. Refers NRC letter of 9/29/76. GIVES SUMMARY STATUS FOR REGULATORY GUIDE USE FOR STRUCTURAL (ELECTRICAL) ENGINEERING.

7/28/77 - Letter, Howell to NRR (Boyd). Proposed FSAR Section 13.2 on Plant Staff Training for Cold Operator Training.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5242

Docket No. 50-346
License No. NPF-3

August 23, 1977

Serial No. 367

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reportable Occurrence NP-33-77-44
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: July 29, 1977

Enclosed find three copies of Licensee Event Report NP-33-77-44 with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 30 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 30 copies Licensee Event Report
30 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet

AUG 29 1977

UNIT 2 LINER PLATE BULGE

2/26/77 - Bulge occurrence discovered at 11:00 p.m. (Report No. 50-330/77-02).

2/28/77 - 50.55(e) prompt report to RIII at 2:15 p.m.

3/16/77 - NRC letter with report to licensee with noncompliance regarding failure to report timely.

4/5/77 - Response letter. Commitment made to provide procedure "Reporting Deficiencies to NRC" No. 20-2, Revision No. 3, to prevent recurrence. Currently, Revision 3 still in review and modification stage.

3/23/77 - NRR representative visited site with inspector for damage briefing (50-330/77-04).

4/14/77 - Meeting at Ann Arbor to review actions of bulged plate removal and to review activities relative to proposed repair; D. W. Hayes and R. E. Shewmaker (77-06).

5/4/77 - Site visit for inspection of existing conditions of liner bulge area. D. W. Hayes and R. E. Shewmaker (50-330/77-07).

5/16/77 - Interim report issued per 50.55(e).

5/24-27/77-Special QA Program Inspection.

6/20/77 - Interim report issued per 50.55(e).

6/29-30/77-Site Inspection by R. E. Shewmaker (6/29/77) - (50-330/77-10). Meeting, Ann Arbor (6/30/77) R. E. Shewmaker and R. F. Heishman. Release for proceeding with repairs. Notify when start of repairs.

8/1-5 & 8-9/77 - Site Inspection, T. E. Vandel Witness start of repairs with first four-foot lift of liner plate installed and grouted. Satisfactory. (Report No. 50-330/77-11.)

8/15/77 - Final report issued per 50.55(e) in review by R. E. Shewmaker. Further site inspection planned later.

evidence of burns or insulation integrity deterioration was found. It was determined that the construction equipment shorted one of the wires to ground in an area that is now surrounded by the blockout silicone foam sealant which has effectively insulated whatever insulation was violated. The containment lighting circuit from BE 1167 was re-energized after some preliminary checks and the fault has not re-occurred. Amperage checks of the circuits show no problems. A megger check of the cable, AP BE1167, also shows that the cable is good. Since non-Q AP BE 1167 (Containment Lighting) was the only circuit running through the effected conduit and all electrical checks indicate a good cable, removal of the cable from the penetration for further visual inspection will be performed at the first refueling outage. BE 1101 trip is not unusual under a short circuit situation, as selective breaker tripping is only for overload conditions.

Analysis of Occurrence: Since the reactor had not reached initial criticality, the loss of the Containment Spray Pump 1-1 Discharge Valve and 50% of the Containment Vacuum Relief Isolation Valves for 35 minutes posed no threat to the health and safety of the public or to station personnel. Containment Spray Pump 1-1 was operable, also.

Corrective Action: Power was restored to both MCC E11C and E11E after they were inspected for faults. No future failures with the same cause are expected in the future.

Failure Data: No previous similar events have occurred.

UNIT 1 TENDON SHEATH PROBLEM

4/19/77 - 50.55(e) prompt notification report to RIII made.

4/20/77 - PN-III-77-18 issued.

4/29/77 - Immediate Action Letter issued to CP. Six items of commitments:

1. Notify RIII prior to repairs or modifications. Complete (see Report No. 50-329/77-07).
2. Complete investigation of cause and implement C.A. Not complete, still in discussions with Bechtel regarding adequate performance.
3. Expand overview program - expanded program in process.
4. Notify NRC of placement errors for all embedments starting May 9 and for next 120 days. - 120 days completes on September 9; during that time seven separate items have been reported. See backup sheet A.
5. Review and revice QC inspection procedures. All Bechtel QCI's have undergone review. Revision in progress.
6. Training of QC engineers and field engineers expanded. Training program and retraining is underway.

5/5/77 - Meeting in Jackson with Keppler, Heishman, and Hayes.

5/19/77 - Interim report issued per 50.55(e).

5/24-27/77-Special QA Program Inspection. Five noncompliance items.

1. Bechtel: inadequate piping hanger support plate installation. Currently still open.
2. Bechtel: field engineers mark up installation drawings for hangers. Currently CA complete.
3. Consumers: audit report remain unissued (4). Currently CA complete.
4. Consumers: trends analysis procedure unimplemented. Currently CA complete.

TOLEDO EDISON COMPANY
DAVIS-BESSE UNIT ONE NUCLEAR POWER STATION
SUPPLEMENTAL INFORMATION FOR LER NP-33-77-48

DATE OF EVENT: July 27, 1977

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Loss of power to Containment Spray Pump 1-1 Discharge Valve and to Containment Vacuum Relief Isolation Valves.

Conditions Prior to Occurrence: The plant was in Mode 3, with Power (MWT) = 0 and Load (MWE) = 0.

Description of Occurrence: At 1145 hours on July 27, 1977, the feed breaker (BE1101) for Motor Control Center E11C tripped, which resulted in a de-energization of MCC E11C and MCC E11E. MCC E11E is fed from MCC E11C. When MCC E11C tripped, power was lost to the Containment Spray Pump 1-1 Discharge Valve CS 1530, whose feed breaker is BE1156. Since power was lost to CS1530, Containment Spray Pump 1-1 was declared inoperable. The station entered the Action Statement for Technical Specification 3.6.2.1 which requires two independent Containment Spray Systems to be operable.

Also, when MCC E11C was de-energized, power was lost to five of the Containment Vacuum Relief Isolation Valves. These valves and their breakers are:

VALVE	BREAKER
CV 5070	BE 1137
CV 5071	BE 1138
CV 5072	BE 1139
CV 5073	BE 1140
CV 5074	BE 1141

Since power was lost to these valves, they would not close on a Safety Features Actuation System signal to maintain Containment integrity. The station entered the Action Statement for Technical Specification 3.6.1.1 which requires Containment integrity to be maintained.

Also, as a result of this trip of MCC E11C, both Auxiliary Feedwater Systems were declared inoperable. This was covered in Licensee Event Report NP-32-77-11.

It was found that after investigation no faults existed on MCC E11C or MCC E11E, and they were re-energized successfully at 1220 hours on July 27, 1977. This returned the above valves back to operability, and the station was removed from Action Statements for Technical Specifications 3.6.2.1 and 3.6.1.1.

Designation of Apparent Cause of Occurrence: The cause of the trip of BE 1101 (feeder for E11C) has been determined to have been caused by construction personnel (Bisco) working on penetration PAF2FX in conduit #38357A, which is AP BE1167. The worker noticed a flash as he was manipulating his equipment around noon on Wednesday July 27, which corresponds to the time BE1167 (Containment Lighting Disconnect Switch BSWX7903) feeder breaker tripped. This penetration was inspected and no

5. Champion (Batch Plant): defective batch scale not tagged per procedure. Currently CA complete.

Additional CA for items 3 and 4. CP to reorganize and provide additional manpower. Currently new organization in effect and most all personnel additions completed in August to be reviewed further later. (See organization chart backup sheet B.)

6/27/77 - Interim report issued per 50.55(e).

6/29-30/77 - Site Inspection by R. E. Shewmaker (6/29/77) - (50-329/77-07). Meeting in Ann Arbor (6/30/77). R. E. Shewmaker and R. F. Heishman. Release for proceeding with repairs.

8/1-5 & 8-9/77 - Site Inspection, T. E. Vandel. Report No. 50-329/77-08. Complete record review of repairs to tendon sheaths. No problem areas identified. Installation was accomplished as proposed.

8/12/77 - Final report issued per 50.55(e). Review is completed and thank you letter states that we have no further questions.

LICENSEE EVENT REPORT

CONTROL BLOCK [ ]

LICENSEE NAME	LICENSE NUMBER	LICENSE TYPE	EVENT TYPE
OHDBS1	Ø-ØØNPF-Ø3	4 1 1 1 1	Ø3

CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
CONT	L	L	Ø5Ø-Ø346	Ø72777	Ø82377

EVENT DESCRIPTION

The feed breaker for Motor Control Centers E11C and E11E tripped which caused Containment Spray Valve CS1530 and five vacuum relief isolation valves to be inoperable. Breakers were re-energized within 35 minutes. (NP-33-77-48)

SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
EB	A	ZZZZZZ	A	ZZZZ	N

CAUSE DESCRIPTION

Construction personnel working in a conduit shorted the cable to ground.

FACILITY STATUS	POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
B	ØØØ	NA	A	NA

FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
Z	Z	NA	NA

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION
ØØØ	Z	NA

PERSONNEL INJURIES

NUMBER	DESCRIPTION
ØØØ	NA

OFFSITE CONSEQUENCES

NA

LOSS OR DAMAGE TO FACILITY

TYPE	DESCRIPTION
Z	NA

PUBLICITY

NA

ADDITIONAL FACTORS

NA

NAME Jacque Lingenfelter/ Dale Miller PHONE (419) 259-5000, Ext. 251

BACKUP SHEET A

1. Tendon Sheathing, 5/19/77 identified concern on

   Vertical Sheaths - notified on 5/24/77 (NCR-803) C

2. D.W. Hayes - 6/22/77, 5 #11 bars missing (QF-169)

3. I. T. Yin - 7/15/77, 2 #11 bars missing (NCR-863)

4. D. W. Hayes - 7/28/77, 2 bars missing (QF-175) C

5. T. E. Vandel - 8/15/77, 8 #8 wall dowels missing (QF-176) C

6. D. W. Hayes - 8/16/77, 4 cut bars not replaced (NCR-898)

7. C. E. Jones - 8/17/77, pipe restraint controls omitted - reactor building (NCR-910)

C = Complete

LICENSEE EVENT REPORT

CONTROL BLOCK: [ ]

LICENSEE NAME: [0][0][N][D][B][S][1]

LICENSE NUMBER: [0][0][0][0][-][0][3]

LICENSE TYPE: [A][1]

EVENT TYPE: [0][3]

CATEGORY: [0][1]

REPORT TYPE: [L]

REPORT SOURCE: [1]

DOCKET NUMBER: [0][5][0][-][0][2][4][6]

EVENT DATE: [0][7][3][0][7][7]

REPORT DATE: [0][8][2][4][7][7]

EVENT DESCRIPTION

Steam Generator 1-1 level exceeded the 348 inch limit of Technical Specification 3.4.5. The drain valve was opened and level was restored below the limit within 17 minutes. (NP-33-77-30)

SYSTEM CODE: [C][B]

CAUSE CODE: [A]

COMPONENT CODE: [Z][Z][Z][Z][Z][Z]

ENTRY COMPONENT SUPPLIER: [N]

COMPONENT MANUFACTURER: [Z][Z][Z][Z]

VIOLATION: [N]

CAUSE DESCRIPTION

Personnel error caused the level to exceed the limit. While attempting to maintain the required high level for a turbine roll, the level was inadvertently allowed to exceed the limit.

FACILITY STATUS: [B]

% POWER: [0][0][0]

OTHER STATUS: NA

METHOD OF DISCOVERY: [A]

DISCOVERY DESCRIPTION: NA

FORM OF ACTIVITY RELEASED: [Z]

CONTENT OF RELEASE: [Z]

AMOUNT OF ACTIVITY: NA

LOCATION OF RELEASE: NA

PERSONNEL EXPOSURES

NUMBER: [0][0][0]

TYPE: [Z]

DESCRIPTION: NA

PERSONNEL INJURIES

NUMBER: [0][0][0]

DESCRIPTION: NA

OFFSITE CONSEQUENCES: NA

LOSS OR DAMAGE TO FACILITY

TYPE: [Z]

DESCRIPTION: NA

PUBLICITY: NA

ADDITIONAL FACTORS: NA

NAME: Jacque Lingenfelter/Stan Batch

PHONE: (419) 259-5000, [illegible]

BACKUP SHEET B

Other Items

A. May 27, 1977 - Final report per 50.55(e) regarding the surveillance specimen holder tubes (provided by B&W)
Follow-up agreements were outlined in our letter of thanks dated June 21, 1977.

B. May 27, 1977 - Final report per 50.55(e) regarding component cooling water pump casings.
No comment by RIII, since casings have been rejected and will not be used for Midland.

C. May 24, 1977 - PN-III-77-30, Industrial Accident - Death of Construction Worker (no repercussions)

D. March 22, 1977 - Meeting in RIII offices with B. W. Marguglio, CP Director of Project Quality Assurance Services regarding contemplated independent inspection of NSSS installations.

E. November 14, 1975 - Vessel support LOCA loading adequacy - question.
Analysis is due July 1977 to NRR.

TOLEDO EDISON

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5247

Docket No. 50-346
License No. NPF-3

August 24, 1977

Serial No. 369

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reportable Occurrence NP-33-77-30
Davis-Besse Nuclear Power Station Unit 1
Date of Occurrence: July 30, 1977

Enclosed find three copies of Licensee Event Report NP-33-77-30 with a supplemental information sheet, which is being submitted in accordance with Technical Specification 6.9 to provide 30 day written notification of the subject occurrence.

Yours truly,

Lowell E. Roe/jjf

LER:ljk

Enclosures

cc: Dr. Ernst Volgenau, Director
Office of Inspection and Enforcement
Encl: 30 copies Licensee Event Report
30 copies Supplemental Information Sheet

Mr. William G. McDonald, Director
Office of Management
Information and Program Control
Encl: 3 copies Licensee Event Report
3 copies Supplemental Information Sheet

AUG 29 1977