

June 2, 1983

*E. Adenson - Info*  
*Copy also sent to Claire Miles in Public Affairs*

TO: Paul Rau, Midland Daily News  
FROM: Ron Hernan, Division of Licensing, NRC  
SUBJECT: ASSESSMENT OF TMI ACTION PLAN AT THE MIDLAND PLANT

*Hernan*  
*(Note: This was in response to an oral request by Paul Rau via D. Hood)*

Following the Three Mile Island Unit 2 (TMI-2) accident in March 1979, a number of special commissions and task force groups were assigned by various units of government to study the causes of the accident and make appropriate recommendations. Pending the outcome of these efforts, and pending implementation of an action plan to incorporate lessons learned into the licensing process, the safety review of the Midland Plant (as well as most other plants under review at that time) was suspended. The NRC undertook two major actions to implement the lessons learned as the result of the TMI-2 accident. The first of these was the publishing of NUREG-0660 ("NRC Action Plan Developed as a Result of the TMI-2 Accident") in May 1980, followed by NUREG-0737 ("Clarification of TMI Action Plan Requirements") in November 1980. The second major action occurred in July 1981 with a complete revision to the "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." This revision was issued as NUREG-0800.

As the NRC was developing and implementing its "TMI Action Plan", Consumers Power Company (CPCo) was also reviewing the implications of the accident on the Midland Plant design. A number of system improvements had already been incorporated into the Midland design at the time of the accident. However, additional improvements were later committed to by CPCo following the accident. When the NRC resumed its safety review of the Midland Plant in early 1981, the position was taken that all NUREG-0737 items pertaining to plants under review would be construed as requirements for the Midland Plant. Subsequently, all NRC staff reviewers were required to review (or re-review in several cases) the Midland Plant against NUREG-0800, the revised Standard Review Plan. As the first Babcock & Wilcox plant under consideration for an operating license following the TMI-2 event, Midland has been in the forerunner position of proposing procedural, organization, and hardware changes to meet the intent of the NRC's TMI Action Plan. Midland was also the second plant to be reviewed using the current revision of the Standard Review Plan.

The following paragraphs describe specific areas of improvement which resulted from the collective lessons learned at TMI-2.

#### Organization/Procedural (SER Chapter 13)

CPCo has committed to having a Shift Technical Advisor available on each to provide technical assistance to the Shift Supervisor (or "Plant Supervisor"). During the first year of power operation at Midland, at least one person having commercial PWR startup and/or power operating experience will be available to the operating staff. CPCo has committed to meet (and in some cases exceed) the minimum shift manning levels specified in the TMI Action Plan and to limit the amount of overtime operators are required to work.

Reactor Operator and Senior Reactor Operator training and qualification levels have been upgraded and will include training and examinations on a plant-specific simulator. The responsible CPCo Vice President will certify the competency of each operator candidate prior to examination of the candidate by NRC licensing personnel. Each operator candidate will also receive a minimum of 80 hours of training on mitigating core damage should an accident occur. It should be noted that this training was a factor in minimizing the effects of the steam generator tube rupture at the R. E. Ginna Nuclear Plant in 1982.

Plant operating and emergency procedures will be reviewed by four different organizations within the CPCo corporate structure, including the Safety and Audit Review Board. In addition, a separate and independent organization corresponding to the Independent Safety Engineering Group (ISEG) required in the TMI Action Plan will be established at the corporate level and will review operations at all three nuclear power plants operated by CPCo. Administrative procedures to limit access of personnel to the Main Control Room and to clearly define the responsibilities of personnel in the control room during emergencies will be developed. The CPCo program for implementing all current guidance with respect to operating and maintenance procedures was reviewed in detail by the NRC staff and was found to be acceptable (as discussed in the SER). Special emphasis has been given to emergency operating procedures. The NRC staff and the B&W Owners Group are presently engaged in developing an acceptable "abnormal transient operating guidelines" program (also called ATOG). The Midland emergency procedures will be based upon those guidelines once agreement has been reached.

#### Emergency Planning and Preparedness (SER Section 13.3)

A great deal of knowledge was gained during the TMI event with respect to the ability of the NRC, FEMA, various units of government, and utilities to respond to such an event. Guidance in this area has been published as NUREG-0654, Revision 1 (11/80). The staff is continuing its review of the various planning documents and facilities required prior to operation of the Midland Plant. The unique aspects of the Midland Plant's location (i.e., proximity to the Dow Chemical Plant and to residential/commercial areas) has been a major part of CPCo's planning, and of the NRC/FEMA review. The status of this review has been documented in Supplement No. 1 to the Midland SER and will be updated in Supplement No. 3 (tentatively scheduled for Fall 1983). An on-site appraisal will be conducted by the NRC in early 1983, and a full-scale emergency exercise is currently planned for the Spring of 1984. Significant overall improvements in the area of emergency preparedness at all nuclear power plants include: increased scope and depth of state and country government involvement; installation alert/notification systems for all areas within a 10-mile radius of the plants; better and more frequent emergency training for power plant and surrounding industrial plant operators; more frequent emergency exercises involving on-site and off-site personnel; and integration of nuclear power plant emergency planning into FEMA's area of responsibility. A final assessment of the capability of CPCo, Dow Chemical Company, Dow-Corning, Midland, Saginaw and Bay counties, and the State of Michigan to deal with emergencies at the Midland Plant will be made by the NRC in its final SER supplement prior to issuance of an operating license for the Midland Plant.

### B&W Design Sensitivity Mitigation (SER Section 5.5)

All utilities constructing B&W reactor plants were required by the NRC in October 1979 to submit information required to assess mitigative measures to dampen the sensitivity of the plants to feedwater transients. CPCo responded with studies of seven postulated transients and 14 proposed hardware and procedural changes (see SER Table 5.1). The significant changes incorporated into the design were as follows:

1. Upgrading the pilot-operated relief valve (PORV) to safety-grade.
2. Providing automatically actuated redundant "block valves" downstream of the PORV to preclude failure of the PORV to close (as was the case at TMI-2) causing uncontrolled leakage from the reactor coolant system.
3. Providing a safety-grade automatic control system for the auxiliary feedwater system (AFWS) to prevent, among other things, overcooling transients upon actuation of this system.
4. Training and procedures to minimize manual actuation of the emergency core cooling system (ECCS) following a reactor trip. Independent analyses by CPCo and a NRC consultant show that immediate operator action following a reactor trip should not be necessary.
5. Providing automatic initiation and flow indication on the AFW system.
6. Providing a control system which will prevent feedwater flow from the AFW system to a damaged steam generator.
7. Addition of a third pump to the AFW system.
8. Providing independent indication of PORV position.
9. Addition of an "Anticipatory Reactor Trip System" (ARTS), which provides independent and redundant reactor trip signal on loss of main feedwater or reactor coolant system high pressure. This system contributes to resolution of the generic "Anticipated Transients Without Scram" (ATWS) issue for the Midland Plant (as discussed in Section 7.2.4 of the SER).
10. Providing emergency power supplies to pressurizer heaters and pressurizer level control.

### Auxiliary Feedwater System Reliability (SER Section 10.4.9.2)

In addition to the AFW system improvements discussed above, CPCo provided an extensive reliability analysis of the AFW system to the NRC staff. Although the system as originally designed fell into the "medium" reliability range, the NRC required that a third pump be installed into this system to further increase its reliability. In addition, a number of other NRC recommendations to improve reliability of the AFW system have been incorporated into the Midland design.

Post-Accident Sampling Capability (SER Section 6.1.1.3)

The TMI Action Plan required installation of instrumentation to sample and analyze reactor coolant and containment atmosphere samples during and following an accident in which there is core degradation. The main purpose of this system is to enable analysis of the severity of the accident, and the possible severity of off-site release while minimizing radiation exposure to those personnel involved in obtaining the samples. CPGO has committed to installing such a system at the Midland Plant.

Control Room Habitability (SER Section 6.4)

As required by the TMI Action Plan, CPGO has committed to an upgraded system for maintaining the Main Control Room atmosphere habitable in the event of toxic or radiological releases to the environment. The detection instruments for this system provide also for detecting releases which could occur from the nearby Dow Chemical Plant.

Control Room Design Review (SER Section 18.1)

As a result of the TMI-2 accident, the NRC established a Human Factors Engineering Branch and issued guidelines to incorporate human factors concepts into the design of control rooms. This upgrading effort is in progress at the Midland Plant and a final review will be conducted by the NRC prior to licensing.

Instrumentation to Detect Inadequate Core Cooling (SER Sections 4.4.4.1, 5.4.7)

The TMI Action Plan requires installation of special instrumentation to detect inadequate cooling of the reactor core (such as occurred at TMI-2). A related Action Plan item requires installation of vent paths from all high points in the reactor coolant system, including the reactor vessel head area. These improvements have been or will be installed in the Midland Plant.





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

*Warnick*

October 5, 1983

NOTICE OF SIGNIFICANT LICENSEE MEETING

Name of Licensee: Consumers Power Company  
Name of Facilities: Midland Nuclear Plant, Units 1 and 2  
Docket Nos.: 50-329; 50-330  
Date and Time of Meeting: Tuesday, October 11, 1983, at 3:00 p.m. (CDT)  
Location of Meeting: U. S. Nuclear Regulatory Commission, Regional Office,  
Glen Ellyn, Illinois  
Purpose of Meeting: Enforcement Conference to Review the Office of  
Investigation Report and IE Enforcement Actions  
on the Alleged Violation of the ASLB Order on  
Remedial Soils

NRC Attendees:  
James G. Keppler, Regional Administrator  
R. F. Warnick, Director, Office of Special Cases  
Others from RIII, IE, NRR as appropriate

Licensee Attendees:  
S. Howell, Executive Vice President  
J. W. Cook, Vice President  
Others as designated by the licensee

NOTE: Attendance by NRC personnel at the meeting should be made known by  
October 7, 1983, via telephone call to J. J. Harrison, Region III,  
FTS 388-5635

Distribution:  
R. C. DeYoung, Director, IE  
E. L. Jordan, Director, Division of Emergency Preparedness and Engineering  
Response, IE  
J. M. Taylor, Director, Division of Quality Assurance, Safeguards, and  
Inspection Programs, IE  
J. A. Axelrad, Acting Director, Enforcement Staff  
D. G. Eisenhut, Director, Division of Licensing, NRR  
E. G. Adensam, Chief, Licensing Branch No. 4  
R. L. Tedesco, Assistant Director for Licensing, NRR

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*Warnick*

OCT 5 1983

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

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

Gentlemen:

This is to confirm the arrangements between Mr. J. Cook of Consumers Power Company and J. Harrison of the Region III staff scheduling October 11, 1983, at 3:00 p.m., as the date and time to discuss the alleged violation of the ASLB Order for the Midland site related to the remedial soils area and possible IE enforcement actions. This meeting is to be held at the Region III office in Glen Ellyn, Illinois.

If you have any questions concerning this meeting, we will be happy to discuss them with you.

Sincerely,

"Original signed by R. F. Warnick"

R. F. Warnick, Director  
Office of Special Cases

cc: DMB/Document Control Desk (RIDS)  
Resident Inspector, RIII  
The Honorable Charles Bechhoefer, ASLB  
The Honorable Jerry Harbour, ASLB  
The Honorable Frederick P. Cowan, ASLB  
The Honorable Ralph S. Decker, ASLB  
William Paton, ELD  
Michael Miller  
Ronald Callen, Michigan  
Public Service Commission  
Myron M. Cherry  
Barbara Stamiris  
Mary Sinclair  
Wendell Marshall  
Colonel Steve J. Gadler (P.E.)  
Howard Levin (TERA)  
Billie P. Garde, Government  
Accountability Project  
Lynne Bernabei, Government  
Accountability Project

RIII  
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## UNITED STATES NUCLEAR REGULATORY COMMISSION

OFFICE OF PUBLIC AFFAIRS, REGION III  
799 Roosevelt Road, Glen Ellyn, Illinois 60137

NEWS ANNOUNCEMENT: 84-01  
CONTACT: Jan Strasma 312/790-5674  
Russ Marabito 312/790-5667

### NRC STAFF ISSUES ORDER REQUIRING INDEPENDENT REVIEW OF MIDLAND NUCLEAR PROJECT MANAGEMENT

The Nuclear Regulatory Commission's Office of Inspection and Enforcement has issued a Confirmatory Order to Consumers Power Company requiring the utility to submit a plan for an independent appraisal of site and corporate management organizations for the Midland Nuclear Plant construction project.

The Order is based, in part, on the results of an NRC investigation conducted between January 3 and August 8, 1983, which concluded that Consumers Power had excavated soil below an electrical duct bank without prior NRC approval, thereby violating an Atomic Safety and Licensing Board Order. A pipe containing water for firefighting purposes also was relocated during excavation without the required NRC approval.

The plan for an appraisal of site and corporate management must be submitted to the NRC's Region III Regional Administrator in Glen Ellyn, Illinois for review and approval. The plan requires the appraisal to be conducted by an independent management consulting firm. This firm is expected to: (1) Evaluate the utility's current organization responsibilities, management controls and communications systems at both the site and between site and corporate headquarters; and (2) review the capability and competency of management and supervisory personnel to manage construction activities at Midland, consistent with NRC regulatory requirements.

Once the appraisal is completed, the independent firm is expected to recommend, where necessary, improvements in management communication, control, and oversight of the project.

The plan, which must be submitted to NRC Regional Administrator James G. Keppler by February 11, should recommend the independent firm and its qualifications, provide a discussion of how the appraisal will be documented, and describe how any recommended changes will be implemented.

Consumers Power, in a meeting with Mr. Keppler on January 4, 1984, agreed to submit the appraisal program to the NRC. The Order confirms that commitment. In issuing the Order, Richard C. DeYoung, Director of the Office of Inspection and Enforcement, said the history of the Midland project "demonstrates that management has not been effective in providing the attention to the detail and high quality standards necessary to the proper construction of the facility. In view of this history, including the violation of the Board Order, I have determined that a management appraisal is required at this time."

On October 6, 1983, the NRC approved a Construction Completion Program (CCP) for the Midland Plant. The NRC believes this program was necessary to verify existing construction and to insure the adequacy of future construction because of the quality assurance problems found at the plant in late 1982, the facility's history of QA problems, and the ineffectiveness of previous corrective actions to fully resolve the problems.

Stone and Webster Engineering Corporation was approved by the NRC to overview the CCP. It will continue in this capacity until Consumers Power has demonstrated that this third-party overview is no longer necessary. "Such a finding cannot now be made," DeYoung said.

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January 16, 1984

MARK MILLER  
7610 HEIGHTS RD. RD.  
RAVENNA, MI. 49451

TO: JAMES KEPPLER  
REGION III ADMINISTRATOR  
NUCLEAR REGULATORY COMMISSION  
799 ROOSEVELT ROAD  
GLEN ELYN, IL. 60137

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PRINCIPAL STAFF			
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D/RA		DE	
A/RA		DRMSP	
RC		DRMA	
PAO		SCS	✓
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Dear Mr. Keppler;

Consumers Power Company of Michigan is asking for about 70% rate hike to offset costs at the Nuclear Plant in Midland.

The request, amount of deficit, and amount of funding requested are all outrageous, and should not be allowed. 5% would be too much.

This reminds me of the military intentionally driving up costs to bring more money into its sector. In my mind Consumers Power is striking the same pose. National defense is one thing (even if some money is pocketed by individuals) but to allow the rape of the people of Michigan's pockets is purely un-acceptable. I hope my opposition to





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

RFW

November 14, 1983

NOTICE OF SIGNIFICANT LICENSEE MEETING

Name of Licensee: Consumers Power Company

Name of Facility: Midland Nuclear Plant, Units 1 and 2

Docket Nos.: 50-329; 50-330

Date and Time of Meeting: Wednesday, November 16, 1983 at 9:00 a.m. (CST)

Location of Meeting: Holiday Inn-O'Hare  
3801 N. Mannheim Rd.  
Schiller Park, IL

Purpose of Meeting: Enforcement Conference to re-review the Office of Investigation Report and IE Enforcement Actions on the Alleged Violation of the ASLB Order on Remedial Soils

NRC Attendees:

R. C. DeYoung, Director, Office of Inspection and Enforcement  
James G. Keppler, Regional Administrator, RIII  
J. Lieberman, Director, Division of Regional Operations and Enforcement, ELD  
Others from RIII, IE, NRR, as appropriate

Licensee Attendees:

J. Selby, President and Chairman of the Board  
S. Howell, Executive Vice President  
Others as designated by the licensee

NOTE: Attendance by NRC personnel at the meeting should be made known by November 15, 1983, via telephone call to J. J. Harrison, Region III, FTS 388-5635

Distribution:

R. C. DeYoung, Director, Office of Inspection and Enforcement  
E. L. Jordan, Director, Division of Emergency Preparedness and Engineering Response, IE  
J. M. Taylor, Director, Division of Quality Assurance, Safeguards, and Inspection Programs, IE  
J. A. Axelrad, Director, Enforcement Staff  
E. G. Eisenhut, Director, Division of Licensing, NRR  
E. G. Adensam, Chief, Licensing Branch No. 4  
R. L. Tedesco, Assistant Director for Licensing, NRR

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

RFW

JUL 26 1983

MEMORANDUM FOR: Region III Files  
FROM: R. F. Warnick, Director, Office of Special Cases  
SUBJECT: MEETING WITH BECHTEL ON PROCUREMENT QUALITY ISSUES

A meeting was held between Bechtel (Messrs. Smith, Trotter, and Heisler) and the NRC (Messrs. Keppler, Warnick, Harrison, and Cook, Region III, and Mr. Hale, Region IV) at the NRC Glen Ellyn office on July 20, 1983. The purpose of this meeting (which was requested by Bechtel) was to discuss Bechtel's actions as a result of certain NRC concerns discussed at the October 29, 1982, NRC/Bechtel meeting in Ann Arbor.

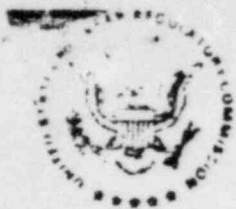
Bechtel made a presentation informing NRC of improvements and changes taken/being taken by Bechtel to correct specific and generic problems in procurement and procurement quality-related areas. Actions pertaining to specific problem identification and resolution were outlined and discussed for the following vendors: Victoreen, Zack, Trans American-DeLaval, Vitro, NPS, Compsip-Delphi, Ray Miller, Gould-Brown Boveri, and Limitorque. Actions related to generic problem identification, resolution, and tracking were outlined and discussed for problems such as bolting and electrical issues (soldering, terminations, and panel welding).

Bechtel presented data showing improvements in the quality program area by increasing the numbers, experience, and education levels of the Procurement Surveillance Quality Department (PSQD). Improvements were also pointed out in the PSQD areas of workload, audits conducted, supplier performance improvements, significant special activities, typical inspection plans and techniques, and training.

*RF Warnick*  
R. F. Warnick, Director  
Office of Special Cases

cc: Region IV  
DMB/Document Control Desk (RIDS)

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

February 1, 1982

CHAIRMAN

PERMIT NUMBER 50-275/323  
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The Honorable John D. Dingell, Chairman  
Committee on Energy and Commerce  
United States House of Representatives  
Washington, D.C. 20515



Dear Mr. Chairman:

We share the concerns expressed in your November 10, 1981 letter regarding the implication of the recent seismic design errors detected at the Diablo Canyon nuclear power plant. The implication of these errors has been and will be thoughtfully considered by the Commission.

The timing of the detection of these errors, so soon after authorization for low-power operation, was indeed unfortunate and it is quite understandable that the Congress' and the public's perception of our licensing process has been adversely affected. Had this information been known to us on or prior to September 22, 1981, I am sure that the facility license would not have been issued until the questions raised by these disclosures had been resolved.

Because of these design errors, on November 19, 1981 we suspended Pacific Gas and Electric Company's (PG&E) license pending satisfactory completion of the following:

1. The conduct of an independent design review program of all safety-related activities performed prior to June 1, 1978 under all seismic-related service contracts used in the design of safety-related structures, systems and components.
2. A technical report that fully assesses the basic cause of all design errors identified by this program, the significance of the errors found and their impact on facility design.
3. PG&E's conclusions of the effectiveness of the design verification program in assuring the adequacy of facility design.
4. A schedule for completing any modifications to the facility that are required as a result of the design verification program.

In addition, the Commission ordered PG&E to provide for NRC review and approval:

1. A description and discussion of the corporate qualifications of the company or companies that PG&E would propose to carry out the

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independent design verification program, including information that demonstrates the independence of these companies.

2. A detailed program plan for conducting the design verification program.

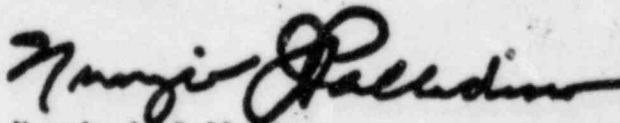
In recognition of the need to assure the credibility of the design verification program, NRC will decide on the acceptability of the companies proposed by PG&E to conduct this program after providing the Governor of California and Joint Intervenor in the pending operating licensing proceeding 15 days for comment. Also, the NRC will decide on the acceptability of the plan proposed by PG&E to conduct the program, after providing the Governor of California and the Joint Intervenor in the pending operating license proceeding 15 days for comment.

Prior to authorization to proceed with fuel loading, the NRC must be satisfied with the results of the seismic design verification program and with any plant modification resulting from that program that may be necessary prior to fuel loading. The NRC may impose additional requirements prior to fuel loading necessary to protect health and safety based upon its review of the program or any of the information provided by PG&E. This may include some or all of the requirements specified in the letter to PG&E dated November 19, 1981.

Responses to each of the four questions in your letter are enclosed.

A decision to permit PG&E to proceed with fuel loading will not be made until all the actions contained in the Commission's November 19, 1981 Order are fully satisfied.

Sincerely,



Nunzio J. Palladino

cc: Rep. Carlos Moorhead

Enclosures:

1. Commission Order, dated 11/19/81
2. Ltr from Office of Nuclear Reactor Regulation, NRC to PG&E dated 11/19/81
3. Responses to Questions



Warnick

ISHAM LINCOLN & BEALE  
CONSTITUTIONAL LAW

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CHICAGO, ILLINOIS 60601  
TELEPHONE 312-552-7500  
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EDWARD S. ISHAM 1872-1962  
ROBERT T. LINCOLN 1872-1889  
WILLIAM G. BEALE 1855-1923

WASHINGTON OFFICE  
1120 CONNECTICUT AVENUE, N.W.  
SUITE 840  
WASHINGTON, D.C. 20036  
202 833-9730

BY MESSENGER

November 23, 1983

Steven Burns, Esq.  
Nuclear Regulatory Commission  
OELD  
Bethesda, Maryland

Dear Steve:

Enclosed, as promised, is a memorandum setting forth my presentation on behalf of Consumers Power Company at the recent enforcement conference in Chicago. If you have any additional questions, please feel free to contact me,

Sincerely,

*Michael J. Miller*

Michael I. Miller

MIM:es

enc. 4 copies of memorandum

cc Stephen H. Lewis, Esq.  
Region III  
w/ 4 copies of memorandum  
By Messenger

*8312020225*

MEMORANDUM

To: Richard C. DeYoung  
James G. Keppler

From: Michael I. Miller

Date: November 22, 1983

Re: Consumers Power Company Midland Nuclear Power Plant:  
Alleged Violation of April 30, 1982 ASLB Order.

This memorandum is a written version of the remarks I made at the enforcement conference on Tuesday, November 15, 1983. Since I did not read from a prepared text this memorandum will vary in small ways from my oral remarks. I have included citations to the ASLB transcript and attachments to the two investigation reports authored by the Office of Investigations.\*

There was a significant difference in the conclusions reached by the Office of Investigations reports. The June report basically concluded that it was not possible to determine whether a violation of the Board's order had taken place. The September report, however, concludes that there was indeed a violation of the Board order and that the circumstances indicate a "possible ... careless disregard of regulatory requirements" by Consumers Power Company ("CPCo"). The Company is concerned both about the conclusion of violation and the use of the words "careless disregard" since that phrase denotes willfulness under the NRC's Enforcement Policy.

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\* References to the ASLB hearing transcript are designated "(Tr.p. \_\_)". References to the attachments dated June 2, 1983 OI report and the September 12, 1983 OI report are designated "(Attach. \_\_, Report No. 1)" and "(Attach. \_\_, Report No. 2)" respectively.

63-2020229

The investigation was reopened in order to further investigate two matters.

1. Certain statements attributed to a man named John Donnell, a former Babcock & Wilcox Company employee on loan to MPQAD, the Midland site quality assurance organization, during the first 7 months of 1982. It was asserted that Donnell had stated that he knew Dr. Landsman had prohibited the excavation under the deep-Q duct bank; that the excavation went forward in knowing disregard at Dr. Landsman's direction; and that he was terminated because he had told some unidentified CPCo manager that the excavation was contrary to Dr. Landsman's direction.

2. The reopened investigation also looked further into the circumstances surrounding the meeting which took place at the Midland site on May 20, 1982 which was attended by representatives of NRR, Region III, CPCo and Bechtel.

It is CPCo's position that the reopened investigation regarding Mr. Donnell adds nothing to the facts regarding the violation of the Board order. Mr. Donnell's observations were reported by Dr. Landsman and Mr. R. Cook of Region III. The OI investigators assigned to interview Mr. Donnell, Mr. Walker and Mr. Galanti, had only a passing familiarity with the subject matter of the investigation. While they received approximately a 2 hour orientation by Mr. Weil and therefore had some familiarity with the factual circumstances surrounding the excavation under the deep-Q duct bank, the investigators had no familiarity with the Licensing Board's April 30, 1982 order nor with CPCo's excavation

permit system. John Donnell's testimony has not yet been taken. It is scheduled for December 3, 1983. However, his deposition has been taken by CPCo with the NRC Staff lawyers in attendance. At his deposition Mr. Donnell did not corroborate the statements attributed to him by Dr. Landsman and Mr. Cook and verified that in fact he signed the excavation permit for the excavation under the deep-Q duct bank which is alleged to be a violation of the Board's order (Attach. 6, Report No. 1). Donnell stated emphatically that had he believed the excavation was a violation of the Board Order he never would have signed the permit (for a discussion of the excavation permit system see infra pp. 8-9).

The supplemental OI investigation did not turn up any major new facts with respect to the May 20, 1982 meeting.

The facts as disclosed on the record before the Licensing Board indicates that the NRC was sending mixed signals to CPCo regarding excavations in and around the deep-Q duct bank. These excavations are a part of the freeze wall which has been installed at the Midland site as a temporary construction feature. The freeze wall consists of pipes through which refrigerant is passed. The soil down to the impervious till layer is frozen and the flow of ground water through the site is intercepted. Once the ground water flow is intercepted the excavation for underpinnings under the auxiliary building can be made dry. The freeze wall intercepts safety related underground utilities at 4 locations. At each of those locations a protection method had to be devised which did not compromise the integrity of



the freeze wall while protecting the underground utility from damage resulting from the heaving of the frozen soil.

The freeze wall was first proposed by CPCo to the Staff in mid-1981 and by November 16, 1981 the Staff had formally approved installation of the freeze wall hardware. That approval was the subject of Staff testimony on December 1, 1981 and at that time Mr. Hood, NRC Project Manager, testified that approval of installation was approval of all activities short of turning the freeze wall on (Tr. p. 5489). The Company and the Staff continued their discussion regarding activation of the freeze wall primarily centering on the protection of underground utilities after activation where those utilities intercept the freeze wall. In January 1982 CPCo made a further submittal to the staff which indicated an approximate one foot gap beneath the two duct banks (Attach. 14, Report No. 1 ) The design concept for protection of the underground utilities was presented in schematic form. The NRC thereupon authorized activation of the freeze wall as well. Thus, as of February, 1982 specific NRC approval had been granted for both installation and activation of the freeze wall thereby exempting those activities from the scope of the April 30, 1982 order.

Following the issuance of the Board's April 30 order, CPCo sought to establish the precise limits of the Staff's prior approval of soils related activities. To that end it sent a letter to the Staff dated May 10, 1982, describing, among other matters, the activities for which the Company believed prior approval had been obtained with respect to the freeze wall (Attach. 3, Report No. 1). The letter included the freezwall

activities "utility protection" and "soil removal".

After the February 1982 approval letter from the Staff, work proceeded on all 4 utility crossings. In each instance, field conditions dictated that changes be made in the precise method by which utility protection could be achieved although the concept as described in CPCo's January submittal was honored. For all of the crossing except the deep-Q duct bank, construction associated with utility protection was substantially completed within six weeks after April 30 (See Tr. pp. 21960-964). For each of these 3 crossings a concrete base mat was poured at the bottom of the excavation and a surcharge was applied to the concrete base mat to prevent differential settlement. (This arrangement is shown in the Bechtel drawings which were distributed at the enforcement conference.)

With respect to the deep-Q duct bank, it was discovered that the elevation of the duct bank was about 11 feet lower than anticipated so that the design concept of a one foot gap under the duct bank and angled refrigeration pipes could not be accomplished. As of May 20, 1982 the duct bank had been exposed and the NRC had been apprised of CPCo's intention to excavate underneath the duct bank to the till layer and pour a 9 foot plug of concrete to act as a barrier to ground water in that location.

On May 20, at the request of Dr. Landsman, an informal meeting was held at the Midland site. In addition to Dr. Landsman two representatives of NRR were present, Darl Hood and Joseph Kane. They were present at Midland because of an ACRS subcommittee

meeting on site that day. The impromptu nature of the meeting caused Mr. Hood to be concerned about the lack of public notice which is required for such meetings by NRC policy. Accordingly he requested that no one publish minutes of the meeting and the primary documentary source regarding the subjects discussed at the meeting are the handwritten, uncirculated notes of a Bechtel employee (Attach. 5, Report No. 2)

The May 20 meeting discussed a number of other subjects beyond the 4 utility crossings. With specific reference to the excavation under the deep-Q duct bank Mr. Kane expressed his concern that excavation and back fill with concrete would create a "hard spot" which could result in differential settlement affecting the utility. Similar concerns were expressed with respect to the other 3 utility crossings which were then complete but the NRC Staff gave no indication that these 3 utility crossings were not in compliance with regulatory requirements. At Dr. Landsman's exit interview on May 21 he announced that he had discovered no items of noncompliance during his inspection on the preceding day (Attach. 9, Report No. 1).

While recollections of the various participants in the meeting vary, it seems clear that Dr. Landsman in fact stated that there was to be no excavation under the deep-Q duct bank until NRR approval had been obtained. That admonition was apparently repeated at the May 21 meeting and is recorded in a somewhat confusing manner in CPCo's minutes of the exit interview. Thus, fairly summarized, the May 20 meeting

resulted in CPCo being aware that the NRC was concerned about the concrete back fill under the deep-Q duct bank and that the Company had been directed not to proceed with the excavation until NRR approval took place.

The May 20 meeting was followed by a letter from NRR to CPCo dated May 25, 1982 (Attach. 4, Report No. 1). Mr. Hood has testified that he took account of the discussions of the May 20 meeting in the May 25 letter and that he specifically intended the letter as a "warning" to CPCo not to excavate under the deep-Q duct bank (Tr. p. 21797-98). There is no specific reference to the deep-Q duct bank in the May 25 letter. Both soil removal and utility protection activities are specifically confirmed as having been authorized prior to April 30. Yet as of May 20 the only soil removal and utility protection yet to be done with respect to the freeze wall was the excavation under the deep-Q duct bank. Mr. Hood has testified that his disapproval of the activity "related work in support of the freeze wall" was intended by him to document the fact that the Staff had not approved the excavation under the deep-Q duct bank. With hindsight, it is now apparent that after receipt of the May 25 letter there was confusion between what the NRC Staff intended and what CPCo upper management (particularly Mr. Mooney, CPCo's soils project manager) understood had been approved.

This lack of understanding between CPCo and the NRC staff continued at a design audit conducted in Ann Arbor in late July, 1982. CPCo prepared the agenda for the design audit and included as one item all of the freeze wall crossings.



CPCo indicated that the status of these freeze wall crossings was "confirmatory" thereby acknowledging that CPCo still owed the NRC Staff documentation regarding the concrete back fill at the 4 utility crossings. At the conclusion of the design audit, James Knight of NRR announced that there were no further open items. However, in SSER No. 2 issued in October 1982 the design modifications and back fill of the utility crossings are shown as an open item. The FSAR documentation of the freeze wall crossing is shown as a confirmatory item. These comments in the SSER relate to all 4 crossings including the 3 which were completed between April 30 and May 20, but which have never been asserted to be a violation of the Board order. The notes of the July design audit prepared by Mr. Hood were sent out after the SSER was published and state that the entire freeze wall crossing matter is a confirmatory item (Attachment 16, Report No. 1). In statements given to Mr. Pawlik of the OI, Mr. Hood was reported as saying the issue was an "open confirmatory" issue and Mr. Kane was reported as saying that the issue was a "confirmatory" issue. At the hearings in November, Mr. Hood deleted the word "confirmatory" in his statement and Mr. Kane changed the word "confirmatory" to the word "open" (Tr. pp. 21570-72).

All of the foregoing activity and the communication to and from the NRC Staff involved Mr. Mooney of CPCo, its soils project manager and his assistant, John Schaub. Thus, as of May 25, 1982 and thereafter these men believed that the NRC had indicated its approval of the excavation under the deep-Q duct bank.

Because of problems encountered in excavations and drilling during the first quarter of 1982, CPCo was developing an excavation permit system in the time period from April to early June, 1982. The excavation permit system requires that a representative of CPCo sign the permit, signifying that all necessary NRC approval had been obtained. Mr. Robert Wheeler, CPCo remedial soils section head, was the responsible official for signing off on behalf of CPCo construction. Mr. Wheeler was very conscious of the April 30 order and its requirement for explicit NRC approval. Between April 30 and June 11, 1982 he sought and obtained Dr. Landsman's specific approval for every excavation request or permit at the Midland site. On June 11 Dr. Landsman approved the excavation permit procedure and further stated to Mr. Wheeler that he did not wish to look at all excavation permits prior to the excavation beginning. Dr. Landsman stated in substance, as understood by Mr. Wheeler, that minor excavation could go ahead without prior approval but that he wanted to review excavation permits for major excavations such as the service water pump structure underpinning prior to such an excavation commencing. Mr. Wheeler interpreted Dr. Landsman's approval of minor excavations as extending to all routine non-drilled excavations. Dr. Landsman's understanding of his approval was that it was limited to minor excavations for work that had been previously approved by the NRC. (See Tr. PP. 21933-934). Dr. Landsman stated that he never expressed this limitation to Mr. Wheeler since it was obvious (Tr. p. 21938)

The May 7, 1982 Board order specifically authorizes oral approvals of excavations but directs that any oral approvals be documented by the Staff. Dr. Landsman did not document his June 11, 1982 approval of minor excavations. The only documentation is a handwritten note to the file prepared by Mr. Wheeler on June 11, 1982 (Attach. 10, Report No. 1). On the basis of his understanding of that agreement Mr. Wheeler, through subordinates, authorized the excavation under the deep-Q duct bank and the other excavation which is claimed to be a violation of the Board order, the fire line relocation. It is worth noting that on two occasions after June 11 Dr. Landsman was requested by Mr. Wheeler to review excavation permits for "minor" excavations, Dr. Landsman declined to do so.

No matter what criteria are applied to these excavations they can only be regarded as minor. The excavation under the deep-Q duct bank involves the removal of a minimal quantity of soil especially when compared to the major excavations contemplated at the site. On that basis the fire line relocation excavation would similarly be characterized as minor. If the determination of a major or a minor excavation was to be based on its safety significance, there are strong indications that the safety significance of both these excavations was minimal. The excavation under the deep-Q duct bank has been in place for almost 18 months. No back fill of any sort has been placed in the excavation. There is no indication that the Staff would want the excavation to be refilled with soil although such

a procedure would restore the excavation to its May 20, 1982 condition and could be accomplished quite easily. Similarly no reversal of the fire line relocation has been directed.

At two significant management levels of CPCo, at which the Staff position with respect to excavation under the deep-Q duct bank could have been clarified there were missed communications. Mr. Mooney believed that the excavation had been specifically authorized by the NRC Staff. In this connection it is worth noting that Mr. Kane, although expressing his belief that the Board order has been violated nonetheless stated that he believed that Mr. Mooney was honest and a man of integrity (Tr. pp. 21875-77). Mr. Mooney testified that had he realized the NRC Staff had misgivings about the excavation he would have taken steps to make certain it did not occur. Similarly Mr. Wheeler was charged with the responsibility of determining whether NRC approval for excavation had been obtained and authorized both excavations on the basis of an undocumented oral approval for minor excavations which, in retrospect, was ambiguous.

The second OI investigation report was accompanied by a memorandum to Mr. Keppler from Mr. Hayes. That memorandum uses legal terminology to describe CPCo's culpability. CPCo is characterized as negligent. Viewed from the perspective of December, 1983 with two exhaustive investigations and 7 days of hearings devoted to this issue, it seems clear that the Company bears a burden for failing to have a clear understanding of the



Staff's position. It should have sought further clarification of the Staff position with respect to the deep-Q duct bank. It is also clear that in at least two respects the Staff contributed to missed communications which resulted in the alleged order violation. Could Mr. Hood have expressed himself more clearly in his May 25 letter? He conceded as much in his testimony (Tr. p. 21811). Should Dr. Landsman have documented his oral approval of minor excavations on June 11, 1982? The Board order of May 7 answers that question in the affirmative.

It is CPCo's position that because of the June 11, 1982 approval of minor excavations by Dr. Landsman there was no violation of the Licensing Board's April 30 order. Moreover, because of the ambiguities in the May 25, 1982 letter from NRR to CPCo, Mr. Mooney believed that all the excavations were within the scope of pre-April 30 approvals. Similar considerations lead to the conclusion that there was no violation of Dr. Landsman's May 20 directive. There was no possible motive for violating the Board order, nor is there any objective evidence of willfulness, nor was there any safety significance to the excavations. Escalated enforcement action seems inappropriate.