

MIDLAND - MATERIAL FALSE STATEMENT

J Kane
Rec'd. 1/6/83

January , 1983

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2)

}
Docket Nos. 50-329
50-330

NRC STAFF TESTIMONY OF DARL S. HOOD AND JOSEPH KANE ON MATERIAL FALSE STATEMENT IDENTIFIED IN NRC'S MODIFICATION ORDER OF DECEMBER 6, 1979

Q1. Please state your names and positions with the NRC.

A1. My name is Darl S. Hood. I am the Project Manager for the Midland Plant application for operating licenses. I have served in this position for the Midland Plant since August 29, 1977.

My name is Joseph Kane. I am a Principal Geotechnical Engineer within the Hydrologic and Geotechnical Engineering Branch, Division of Engineering, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission. I have been involved with the NRC's geotechnical review of the Midland application for operating licenses since November 1979.

Q2. Have you prepared statements of professional qualifications.

A2. Yes. Copies of these statements have been previously submitted in this hearing.

B408020178 B40718
PDR FOIA
RICEB4-96

PDR

JDK - cover the fact that required degree of compaction in PSAR Table 2.5-9 was not obtained

- Q3. Please state the purpose of this testimony.
- A3. The purpose of this testimony is to address the material false statement in appendix B to the Order Modifying Construction Permits, dated December 6, 1979.
- Q4. What is the NRC Staff position with respect to this material false statement?
- A4. The material false statement described in Appendix B to the Order Modifying Construction Permits, was made in Section 2.5.4.5.3 of the FSAR. That section provided that "all fill and backfill were placed according to Table 2.5-9". Had the Staff relied on this statement, it would or could have erroneously concluded that the fill and backfill placed for the support of structures and the Diesel Generating Building consisted of "clay" (Table 2.5-9 under "Soil Types") or "controlled compacted cohesive fill" (Table 2.5-14 under "Supporting Soils") which had been compacted, as a minimum, to 95% of ASTM D 1557-66 T modified to get 20,000 foot-pounds of compactive energy per cubic foot of soil (see Table 2.5-9 under "Compaction Criteria"). The reality of the situation is that the fill and backfill beneath the structures and the Diesel Generator Building are neither "clay" nor a "controlled compacted cohesive fill", but consist of a heterogeneous mixture of sand, clay, silt and lean concrete, and the minimum compaction criterion stated as having been achieved by the quoted statement from FSAR Section 2.5.4.5.3 was not achieved.

Therefore, a conclusion by the Staff that the fills and backfills were of a different type or had been compacted to known minimum standards would have been erroneous and would or could have precluded a more probing analysis or further questioning. Based upon the FSAR information, the Staff would or could have concluded that the structure was adequately supported, that it would not experience detrimental settlement, that its foundations would remain stable under both static and earthquake loading, and that the fill properties would be at least equal to design values provided in the FSAR. The Staff's conclusion would have been relevant to the NRC findings pursuant to 10 C.F.R. § 50.57(3) for issuance of operating licenses and would have contributed to a finding that there is reasonable assurance that the activities authorized by the operating license can be conducted without endangering the health and safety of the public.

- Q5. The answer to Q4 indicates that the FSAR was false in at least two respects; (1) the nature of the fill and (2) the compaction criteria. Which of these two respects is material to the Staff's geotechnical safety review?
- A5. As noted during the August 13, 1981 hearing session (Transcript 4426-7), the false statement concerning the compaction criteria was material.

Document Name:
TESTIMONY OF HOOD AND KANE

Requestor's ID:
KARENT

Author's Name:
nw

Document Comments:

January 17, 1983

DOCKETED

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

83 JAN 19 10:53

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	Docket Nos. 50-329-OM
CONSUMERS POWER COMPANY)	50-330-OM
)	50-329-OL
(Midland Plant, Units 1)	50-330-OL
and 2))	

APPLICANT'S
SUGGESTION OF MOOTNESS
OR IN THE ALTERNATIVE
MOTION TO CLOSE THE RECORD
WITH RESPECT TO MATERIAL FALSE STATEMENT

On December 6, 1979 the Acting Director of the Office of Nuclear Reactor Regulation and the Director of the Office of Inspection and Enforcement issued an Order Modifying Construction Permits ("Order") which would have prohibited Consumers Power Company from performing certain soil-related activities at the Midland Plant pending approval of amendments to its construction permits. One of the bases for the issuance of the Order identified in Part III thereof was a "false statement in the FSAR". Part II of the Order identifies this false statement (at p. 2):

8801200047-830117
PDR ADOCK 05000329
G PDR

8 pp.

DS03

[A]s described in Appendix B to this Order, a material false statement was made in the FSAR in that the FSAR falsely stated that "All fill and backfill were placed according to Table 2.5-9." This statement is material in that this portion of the FSAR would have been found unacceptable without further Staff analysis and questions if the Staff had known that Category I structures had been placed in fact on random fill rather than controlled compacted cohesive fill as stated in the FSAR.

Applicant requested a hearing with respect to the Order on December 26, 1979 which led to the appointment of this Licensing Board on March 14, 1980. The Commission's March 14, 1980 Order states:

The Atomic Safety and Licensing Board shall consider and decide the following issues:

1. Whether the facts set forth in Part II of the Directors' Order of December 6, 1979 are correct, and
2. Whether that Order should be sustained.

See also December 6, 1979 Order at p. 6.

Subsequently certain interested persons were allowed to intervene, contentions were admitted, and the proceeding arising out of the December 6, 1979 Order (the "OM" or "Soils" proceeding) was consolidated with the Midland operating license proceeding. Prehearing Conference Order Ruling on Contentions and on Consolidation of Proceedings dated October 24, 1980. The two general issues identified in the Commission's March 14, 1980 Order, together with intervenors' specific contentions, represent the matters in controversy which this Board must decide.

Only one of intervenors' contentions, Stamiris contention 1(a), relates to the material false statement allegation in the December 6, 1979 Order.^{1/} That contention has been fully litigated in the evidentiary hearings held in July and August of 1981, and the parties have submitted findings of fact as to this contention.^{2/}

1/ Stamiris contention 1(a) states:

"Consumers Power Company statements and responses to NRC regarding soil settlement issues reflect a less than complete and candid dedication to providing information relevant to health and safety standards with respect to resolving the soil settlement problems, as seen in:

(a) the material false statement in the FSAR (Order of Modification, Appendix B)."

There are no matters in controversy in the operating license portion of this consolidated proceeding which relate to the material false statement allegation. See 10 CFR § 2.760a.

2/ See Applicant's Proposed Findings of Fact and Conclusions of Law dated October 28, 1981 at pp. 62-65; Stamiris Proposed Findings of Fact submitted on December 10, 1981 at pp. 34-40; NRC Staff Proposed Findings of Fact and Conclusions of Law dated December 30, 1981 at pp. 17-21.

In its October 2, 1981 Memorandum (Concerning Telephone Conference Call of September 25, 1981 and Applicant's Motion for Partial Decision) the Licensing Board granted Applicant's request that it issue a partial initial decision with respect to Stamiris contention 1(a) and other quality assurance and "management attitude" issues.^{3/} In so doing , however, the Board observed with respect to the material false statement:

Testimony has already been received on the "management attitude" aspects of the statement, but the parties have not yet addressed the merits of the allegation in the Modification Order concerning the statement.

October 2, 1981 Memorandum, supra, at p. 4.^{4/} This distinction arose out of Ms. Stamiris' claim that there was still an "open item" with respect to the material false statement, and was made at the suggestion of Applicant and the Staff.

It now appears that there is no longer any need to litigate further the "merits" of the material false statement allegation. This is because Applicant has entered into a number of stipulations with the Staff agreeing not to contest

^{3/} The record has since been reopened with respect to quality assurance, but not management attitude issues. Memorandum and Order (Reopening Record on QA Matters and Establishing Schedule for Prehearing Conference and Discovery) July 7, 1982.

^{4/} As will be discussed below, the Board's statement that the parties had not yet addressed the "merits" of the allegation was not, strictly speaking, accurate. The NRC Staff has presented such testimony. See NRC Staff Testimony of Hood, Kimball and Gallagher on Stamiris Contention 1 at pp. 4-6 and attachments 15 and 17, following Tr. 1560; Tr. 2618-9.

that there were other valid and adequate bases for the issuance of the December 6, 1979 Order. See Joint Exhibits 1 (Q.A.), 2 (Aux. Bldg.), 3 (BWST and Underground Piping), 4 (SWPS), 5 (DGB). Thus it is not necessary to determine the "merits" of the material false statement allegation to decide, as the Commission in its March 14, 1980 Order directed, whether the December 6, 1979 Order should be sustained or modified. The material false statement issue has for all practical purposes become moot.

It could be argued, of course, that even if the Board presently has sufficient information in the record to resolve Ms. Stamiris' contention 1(a) and to determine whether the December 6, 1979 Order should be sustained on other grounds, the Board has the duty to determine whether the December 6, 1979 Order could have been sustained on the basis of the material false statement alleged therein. This seems to be a sterile and pointless exercise.^{5/} It seems extremely

^{5/} This Board has not been delegated the task of determining the appropriateness of a monetary penalty or other sanction not set forth in the December 6, 1979 Order. See Metropolitan Edison Company (Three Mile Island Nuclear Station Unit No. 1), CLI-82-31, 16 NRC ____, October 14, 1982. Therefore there is no need for further scrutiny of the material false statement for any purpose other than determining whether the December 6, 1979 Order should be sustained or modified.

unlikely that further litigation of the material false statement issue will influence the Board's final decision in this proceeding.

Moreover, despite Ms. Stamiris' suggestion in 1981 that there was an "open" item with respect to the material false statement allegation, a careful review of the evidentiary record establishes that no significant "open" item exists. The record is adequate to support any findings which this Board could conceivably need to make on this issue. There is evidence that the FSAR statement listed in Appendix B of the December 6, 1979 Order was inaccurate, and Applicant has conceded this.^{6/} The record also establishes that the misstatement was not intentional.^{7/} Finally, the Staff's explanation of why it believes the statement was material has been received in evidence.^{8/} Intervenors had the opportunity to cross-examine on all these issues.

6/ See NRC Staff Testimony of Hood, Kimball and Gallagher on Stamiris Contention 1 at pp. 4-6 and Attachments 15 and 17, following Tr. 1560; Direct Testimony of Stephen H. Howell at pp. 16-18 following Tr. 2802.

7/ Direct Testimony of Stephen H. Howell at pp. 16-18, following Tr. 2802; NRC Staff Testimony of Hood, Kimball and Gallagher on Stamiris Contention 1 at pp. 4-6, following Tr. 1560, and Tr. 2729-30.

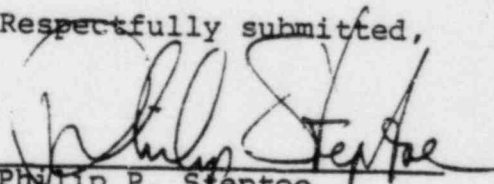
8/ NRC Staff testimony of Hood, Kimball and Gallagher on Stamiris Contention 1 at pp. 4-6 and Attachments 15 and 17, which is bound into the record following Tr. 1560. (The relevant portions of the testimony were admitted into evidence at Tr. 2619.) The Staff's comments on the materiality of the statement were admitted into evidence over Applicant's objection. Tr. 2618. Compare Tr. 4426-27.

Presumably, when the Board indicated that there might be further litigation of the "merits" of the material false statement allegation, it contemplated further testimony as to whether the statement was material. However, Applicant, having since that time agreed not to contest that there were other bases for the issuance of the December 6, 1979 Order, does not intend to submit testimony from its own witnesses concerning the materiality of the statement. The Staff's testimony has already been received into evidence. No other party has identified witnesses on this issue. Moreover, it is the Staff's view of the statement which is of primary interest in light of the definition of "materiality" established in Virginia Electric and Power Company (North Anna Power Station, Units 1 and 2), CLI-76-22, 4 NRC 480, 486 (1976). ^{9/} See also ALAB-324, 3 NRC 347, 358-9 (1976); LBP-75-54, 2 NRC 498, 509-510 (1975). In short, the record is adequate on this issue even if the Board believes it is necessary to make findings with respect to the material false statement allegation.

^{9/} According to the Commission, "[K]nowledge of falsity is not necessary for liability under Section 186 of the Atomic Energy Act, and ... materiality should be judged by whether a reasonable staff member should consider the information in question in doing his job." CLI-76-22, 4 NRC 480, 486.

The Licensing Board's ultimate task in this soils proceeding is to determine whether the corrective actions listed in the December 6, 1979 Order should be sustained, overruled, modified or supplemented. It seems clear that the Board's decision will rest on its resolution of the quality assurance, management attitude, and remedial measures issues which have been and are being litigated in this proceeding. Further discussions of the "merits" or materiality of an historical FSAR statement which the record already establishes was erroneously but inadvertently made would be unlikely to affect the Board's ultimate decision. Accordingly, Applicant suggests that except insofar as it has already been litigated in connection with Stamiris contention 1(a), the material false statement issue is moot, and that no further testimony or findings should be required. In the alternative, the Board should declare the record to be sufficient with respect to this issue.

Respectfully submitted,


Philip P. Steptoe
One of the Attorneys for
Consumers Power Company

Isham, Lincoln & Beale
3 First National Plaza
Chicago, Illinois 60602
(312) 558 7500

Chen

11/03/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC AND SAFETY LICENSING BOARD

In the Matter of)	
CONSUMERS POWER COMPANY)	Docket Nos. 50-329 OM & OL
(Midland Plant, Units 1 and 2)	50-350 OM & OL

NRC STAFF PARTIAL RESPONSE TO
INTERVENOR BARBARA STAMIRIS' INTERROGATORIES
AND DOCUMENT REQUEST TO THE STAFF, DATED AUGUST 30, 1982

I. INTRODUCTION

On August 30, 1982, Intervenor Barbara Stamiris filed "Stamiris Interrogatories and Document Requests to Nuclear Regulatory Commission." Pursuant to 10 C.F.R. § 2.720(h)(2)(ii), written interrogatories to be answered by the Staff are to be filed with the presiding officer. Upon making the necessary findings under that provision, the presiding officer may then require the Staff to answer the interrogatories. Ms. Stamiris did not comply with the provisions of 10 C.F.R. § 2.720(h)(2)(ii). However, in the spirit of cooperation between the parties and to expedite the completion of discovery in this proceeding, but without waiving the provisions of 10 C.F.R. § 2.720(h)(2)(ii) with respect to any other interrogatories, the Staff voluntarily provides this partial response to Ms. Stamiris' interrogatories. Responses to other interrogatories contained in Ms. Stamiris' August 30, 1982 submittal will be forthcoming.

~~82-114416 (1/11)~~

II. DISCUSSION

Interrogatory pertaining to Contention 3

- Part 1: Explain in detail how the NRC has taken into account the prolonged effects of 40 years dewatering upon the plant subsoils and groundwater relationships? Provide the documents which provide basis for this answer.
- Part 2: Did the FES analysis of potential radioactive release to groundwater aquifers following a core melt accident take into into account possible weakening of intermediate soil layers--or other 40 year effects of dewatering? Explain.

Response to Part 1

The NRC Staff has considered the following information in its evaluation of the dewatering effects on the various plant subsoil layers at the Midland site over the estimated 40 years of plant operation.

- a. Because the long term dewatering will lower the groundwater level in the upper perched groundwater system to approximately el. 595 feet, there will be minimum effect to plant subsoils below this level which would include the approximately 150 feet thick preconsolidated impervious clay layer which separates the two groundwater systems. The impervious clay layer has been shown by subsurface explorations to be located between approximately el. 580 feet and bottom el. 430 feet in the auxiliary building area.
- b. In the depths of subsoils which will be affected by dewatering, the Staff anticipates both improvements to the engineering properties of the foundation soils above el. 595 feet and certain adverse effects due to dewatering as discussed below.

- c. An increase in the shear strength of the subsoils would reasonably be expected as dewatering would remove pore water and lower the water content of the foundation soils. This increased shear strength would result in higher margins of safety against bearing capacity type failures. The Staff has not required the applicant to estimate the improvement in safety if acceptable levels of safety had been demonstrated under the more severe conditions (e.g. non-dewatered condition).

- d. Lowering the groundwater to levels below the walls of embedded structures will reduce lateral forces on foundations walls by removing water pressures. This reduction will result in an increase in structure stability.

- e. The major disadvantage of dewatering on the plant subsoils is the removal of buoyancy. This removal causes an increase in the effective weight of the soils mass which in turn places greater loads on the foundation soils leading to greater soil compression. The Staff pursued resolution with the applicant of its concern for increased soil compression due to dewatering in letters to CPC dated March 21, 1979, September 11, 1979, and November 19, 1979, pursuant to 10 C.F.R. § 50.54(f) (questions numbered 33, 39(1), 40(1), 41(2)(b), 42(2)(e), 44(2) and 47(9)). The Staff is satisfied that the settlements estimated by the applicant to occur due to dewatering during plant operation are conservative and acceptable for use in structural analysis which evaluate the effects of these

settlements. In addition, long term settlement monitoring during plant operation will be carried out to verify that estimated settlements are not being exceeded.

- f. Another potential adverse effect of long term dewatering could be the removal of soil fines caused by lowering and pumping of the groundwater in the dewatering wells thereby causing large voids to form. The Staff's position has been, since the time dewatering was initially selected as a remedial measure, to ensure that a high quality dewatering system would be designed and properly controlled and installed in the field so as to avoid the loss of soil fines problem. The Staff efforts in this regard are documented in the above mentioned questions submitted pursuant to 10 C.F.R. § 50.54(f) (questions numbered 24, 47, 49, 50, 51, 52 and 53). The Staff has met on several occasions and has participated in numerous conference calls with the applicant to resolve its safety concerns on the design and installation of the dewatering system. Two documents which summarize the Staff's review efforts are the letter of June 18, 1981 from R. Tedesco, NRC to J. Cook, Consumers Power Company and the letter of May 25, 1982 from D. Eisenhut to J. Cook. Both letters are available in both the local public document room and the public document room in Washington D.C.

As a check on the acceptability of the dewatering system design and field installation, the applicant has successfully completed the full scale field drawdown and recharge test. The monitoring for

Loss of soil fines which has been completed with portions of both the temporary construction and permanent dewatering wells in operation has indicated that the dewatering system can safely operate and meet the required conservative acceptance criteria on loss of soil particles. The established criteria which ensures that the detrimental loss of soil particles will not occur requires that soil fines larger than 0.005 mm that are measured in the collected seepage water are not to exceed 10 parts per million. If this level is reached during plant operation the applicant is required to determine which well or wells are causing the loss of fines and to stop pumping from the well(s). If necessary, the problem well(s) will be repaired or replaced.

- g. In reviewing and evaluating the dewatering system, the Staff considered the effects that the system could have on groundwater levels in the lacustrine sands which are located above the thick clay layer described in 1.a. above. The Staff determined that water levels outside of the plant fill area will not be significantly affected because the plant fill area is surrounded by an impervious trench and slurry wall and because water levels in the lacustrine sands will only be lowered about 10 feet below what they were prior to plant operation. The Staff notes that there are no known groundwater supply wells in the lacustrine sands.

Response to Part 2.

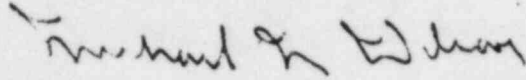
The foundation mats of the containment buildings at Midland are in an imperivous clay layer at an elevation of 572 feet. As explained in 1.a. above, the clay layer has a top elevation of about 580 feet and a bottom elevation of about 430 feet. Thus the clay layer is about 150 feet thick. Since the dewatering system is designed to lower the groundwater to an elevation of 595 feet, groundwater levels during operation will remain about 15 feet above the top of the clay layer.

The meaning of the term "weakening of intermediate soil layers", as stated in the interrogatory is unclear to the Staff. However, the Staff interpreted this to mean any changes to the intermediate soil layers which could result in contaminants reaching potential water users more rapidly or in higher concentrations. As explained in 1.e. above, one of the consequences of dewatering is an increase in the compressibility of the foundation clay layer. This increase in compressibility will in turn result in a corresponding decrease in the hydraulic conductivity (permeability) of the clay and make it more impervious. However, these changes in compressibility and hydraulic conductivity will be small because the clay layer has already been preconsolidated by heavy glaciers over a long period of time.

Based on this information, the Staff concludes that the dewatering system will not result in any changes to the intermediate soil layers that could allow contaminants to reach potential water users more rapidly or in greater concentrations. Thus, the Staff further concludes that the

liquid pathway effects of a core-melt accident would be similar whether the accident occurred during the first year of operation or after 40 years.

Respectfully submitted,



Michael N. Wilcove
Counsel for NRC Staff

Dated in Bethesda, Maryland
this 3rd day of November 1982

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of)

CONSUMER POWER COMPANY)

(Midland Plant, Units 1 and 2))

Docket No. 50-329 OM & OL
50-330 OM & OL

AFFIDAVIT OF JOSEPH KANE

My name is Joseph Kane. I am a principal geotechnical engineer,
Hydrologic and Geotechnical Engineering Branch.

I am primarily responsible for providing the response to the first
part of Intervenor Barbara Stamiris' interrogatory pertaining to
Contention 3, submitted to the Staff on August 30, 1982.

To the best of my knowledge and belief, the above information and
the response to the above interrogatory are true and correct.

Joseph Kane

Joseph Kane

Subscribed and sworn to before me
this 26th day of Oct., 1982.

Judy L. Butts
Notary Public

My Commission expires: July 1, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSUMERS POWER COMPANY

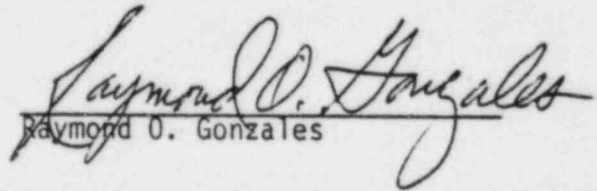
(Midland Plant, Units 1 and 2)

)
)
)
Docket Nos. 50-329 OM & OL
50-330 OM & OL

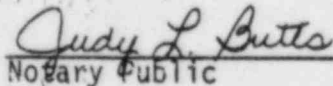
AFFIDAVIT OF RAYMOND O. GONZALES

My name is Raymond O. Gonzales. I am a Hydraulic Engineer in the Hydrologic and Geotechnical Engineering Branch of NRR. In this capacity, my responsibilities include reviewing site flood levels and flood protection designs and nuclide migration of radioactive substances in surface and ground water.

I am primarily responsible for providing a response to the second part of Barbara Stamiris' interrogatory for contention 3, submitted to the staff on August 30, 1982. To the best of my knowledge and belief, the above information and the responses to the above interrogatories are true and correct.


Raymond O. Gonzales

Subscribed and sworn to before
me this 26th of October, 1982


Notary Public

My commission expires: July 1, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

CONSUMERS POWER COMPANY)

(Midland Plant, Units 1 and 2))

Docket Nos. 50-329 OM & OL
50-330 OM & OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF PARTIAL RESPONSE TO INTERVENOR BARBARA STAMIRIS' INTERROGATORIES AND DOCUMENT REQUEST TO THE STAFF, DATED AUGUST 30, 1982" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, this 3rd day of November 1982:

*Charles Bechhoefer, Esq.
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Frederick P. Cowan
Administrative Judge
6152 N. Verde Trail
Apt. B-125
Boca Raton, Florida 33433

*Dr. Jerry Harbour
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Frank J. Kelley
Attorney General of the State
of Michigan
Steward H. Freeman
Assistant Attorney General
Environmental Protection Division
525 W. Ottawa St., 720 Law Bldg.
Lansing, Michigan 48913

Ms. Mary Sinclair
5711 Summerset Street
Midland, Michigan 48640

Michael I. Miller, Esq.
Ronald G. Zamarin, Esq.
Alan S. Farnell, Esq.
Isham, Lincoln & Beale
Three First National Plaza
52nd Floor
Chicago, Illinois 60602

James E. Brunner, Esq.
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

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

James R. Kates
203 S. Washington Avenue
Saginaw, Michigan 48605

Wendell H. Marshall, President
Mapleton Intervenors
RFD 10
Midland, Michigan 48640

Wayne Hearn
Bay City Times
311 Fifth Street
Bay City, Michigan 48706

Paul C. Rau
Midland Daily News
124 McDonald Street
Midland, Michigan 48640

Myron M. Cherry, p.c.
Peter Flynn, p.c.
Cherry & Flynn
Three First National Plaza
Suite 3700
Chicago, IL 60602

T. J. Creswell
Michigan Division
Legal Department
Dow Chemical Company
Midland, Michigan 48640

*Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

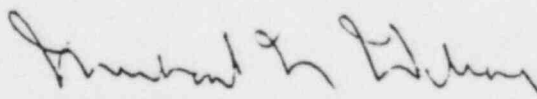
*Atomic Safety and Licensing Appeal
Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Steve J. Gadler, P.E.
2120 Carter Avenue
St. Paul, MN 55108

Frederick C. Williams
Isham, Lincoln & Beale
1120 Connecticut Avenue, NW
Washington, D.C. 20036

Lee L. Bishop
Harmon & Weiss
1725 I Street, N.W.
Suite 506
Washington, D.C. 20006



Michael N. Wilcove
Counsel for NRC Staff