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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Before the Atomic Safety and Licensing Board

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of:)	
)	Docket Nos. 50-329
CONSUMFRS POWER COMPANY,)	50-330
)	
(Midland Plant, Units 1 and 2))	<u>Operating License</u>

RESPONSE TO SECOND SET OF
INTERROGATORIES TO INTERVENOR MARY SINCLAIR

September 29, 1982

These are responses to Consumers Power Co.'s second set of interrogatories dated August 30, 1982. Contentions 3, 5 and 7 are dealt with in the first section.

I. Interrogatory 7

(Contention 3--Accident Assessment)

a. The FES includes a discussion of the uncertainties associated with the numerical estimates of the likelihood, as well as the consequences of severe accidents, that the DES did not carry. The FES states that the uncertainty bounds could be over a factor of 10 but not likely as large as a factor of 100(5-48). The DES, (5-46-66) relying on the Rasmussen study, came up with a factor that underestimates the risk by a factor of 20, according to NUREG/CR/2497, a report which was the basis of my contention and will be a supporting document.

In the first place, the FES was seriously in error because the Lewis Report of January, 1979 (NUREG-CR-D400) specifically states that the Rasmussen Report (WASH-1400) should not be relied upon for public policy determinations, as for example on p. 3, it states: "WASH-1400 is defective in many important ways. Many of the calculations are deficient when subjected to careful and probing analysis. with the result that the accuracy of many of the absolute probabilities calculated therein is not as good as claimed. One key deficiency is the use by the study team of some methodological and statistical assumptions that lack

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credibility. Therefore, the absolute values of the risks presented by the Report should not be used uncritically either in the regulatory process or for public policy purposes."

The documents mentioned above, all other documents obtained under discovery, as well as reports on new studies in this field will be relied upon to establish the facts for Contention 3.

b. I do not expect to have a witness of my own at the hearing. I am relying on the NRC to provide credible witnesses that will support the data in NUREG/CR/2497, pursuant to CFR 2.720(h)(2)(i).

c. I would expect the witnesses that the Applicant and the NRC provides to deal with with the substance of this Contention, i.e., the adequacy of the methodology of the DES for determining the possibility of severe accidents at the Midland nuclear plants, as well as the basis for the new information in the FES and NUREG/CR/2497.

d. Same as for c.

2. Interrogatory 7

(Contention 5--Adequacy of Cooling Pond)

a. My major basis for raising this contention is based on a meeting I attended on September 7, 1978, when James Carson, meteorologist of the Argonne National Laboratory, came to Midland to advise city and county officials of the new predictions about the effects and performance of the Midland nuclear plant's cooling pond based on observations of the operation of the cooling pond for the Dresden II and III plants in Illinois which had gone into operation after the Bechtel models and studies were made that was the data base in CP-FES. A copy of my report made to the Attorney General at his request is enclosed.

There was no transcript of this meeting, and it was my interpretation from my notes that the original study was made from a pond in Arizona. However, I see from the data in DES and FES that the Currier and Hicks models of fogging and icing compared the air-water temperature differences between cooling ponds in the Midwest and Arizona to arrive at their conclusions that the increased fogging

and icing were dependent on air-water temperature differences. Carson's discussion was not that detailed. His concern was to have the County Road Commissioner and City Planning Commission prepared for more fog and icing than was indicated in CP-FES, and to take appropriate practical measures if possible. These facts were also ultimately incorporated into DES (5-7) and FES(9-19). However, both the DES and FES continued to carry the original (and subsequently discredited ^{proved} and/^{unreliable}) tables for thermal performance of the pond of the Bechtel Study, 1973, which were incorporated in the CP-FES.

I had been asked by Michigan's Attorney General Kelley, who had intervened in the Midland O. P. proceeding, to attend this meeting and write a report. That report will be one of the documents I will rely on. To my knowledge, James Carson did not describe the basis of the data for the Bechtel Study, but only referred to it as inadequate, and that the Dresden data was more appropriate to the Midland situation.

b. I would expect that the ASLB would require the presence of James Carson, meteorologist, pursuant to CFR 2.720(h)(2)(i). I would rely on this witness.

c. The NRC witness would be expected to testify primarily on the observations at the Dresden cooling pond.

d. Same as for c.

Interrogatory 7

(Contention 7--Synergism)

a. NUREG/CR/2156, June, 1982, is a study conducted by Sandia Laboratories of the observed effect of synergistic action of low level radiation on the polymers that constitute the insulation of electrical equipment in nuclear plants. This document, as well as any other documents that will be supplied under discovery, and any new research items that deal with the subject of synergism between chemicals and radiation will be relied upon to establish these facts.

b. I would expect the ASLB would require the presence of the director of the Sandia Lab's study for NRC, NUREG/CR/2156 as a witness pursuant to CFR 2.720 (h)(2)(i). I will rely on him/her? as a witness.

c. As described in a.

d. As described in a.

Interrogatory 8

I have described to the best of my ability the documents upon which witnesses will rely in whole or in part in preparation of testimony in my responses to Interrogatory 7 for contentions.

Interrogatory 9

I am relying on the ASLB to subpoena those members of the NRC staff that have direct personal knowledge of the facts to be heard, pursuant to CFR 2.720 (h)(2)(i). I believe these persons must be the best qualified with the Nuclear Regulatory Commission to deal with these issues.

Interrogatory 10

I have not as yet received the document NUREG/CR/2497 (June, 1982) and therefore, cannot respond to this question.

Interrogatory 11

Same as answer above for Interrogatory 10.

Interrogatory 12

Same as answer above for Interrogatory 10.

Interrogatory 13

(With respect to Contention 5)

a. From the text of James Carson's discussions in Midland on September 1978, I gathered that the fogging and icing effects were not properly assessed in the models that formed the basis for the CP-FES report. He brought in observations of the Dresden pond which began operation after that study was prepared that differed significantly from the conclusions of the Bechtel Study of 1973 in CP-FES.

b. James Carson described performances at a pond in Arizona as being quite different in air-water temperatures from what could be expected in the Midwest. The NRC staff continues to iterate that fact in FES(9-19).

c. Thermal performance tools should be developed based on actual operation of the Dresden cooling pond and the more recent Carrier and Hicks models discussed in FES (5-6) rather than relying on the Bechtel 1973 Study and model which has been proved deficient and unreliable by the thermal performance of the Dresden pond under actual operating conditions in the Midwest.

d. The 21% higher heat load of the Dresden pond as cited in FES (5-6) than that predicted by the model can have a significant impact on the length of time the pond can be effective as a cooling source for the reactors, the amount of evaporation and therefore, the chemistry of the pond, and the amount of fog and icing that will occur in the area and its effect on area industry, people, animals, crops and the concentration of both chemical and radioactive pollutants which can become entrapped in heavy fog and will be rained or snowed out or iced out in the area.

Interrogatory 14

I answered all of these interrogatories myself.

Response to Interrogatories for Zack Contentions 6, 8 and 16.

Interrogatory 7 - Contention 6 (Howard's Zack deficiency disclosures)

a. Albert Howard has voluntarily publicly disclosed the extraordinary extent of poor quality control at the Zack Co. which has been responsible for the HVAC system at Midland 1 and 2. This is an important safety system having grave potential consequences for workers and the public if it fails to operate properly. Howard's affidavit and all the exhibits he has provided will be the documents relied upon to establish the facts of his testimony.

b. Albert Howard will be asked to testify

c. He will testify to the events described in his affidavit.

d. Same as for c.

Interrogatory 8

Same as above for Interrogatory 7.

Interrogatory 9

Albert Howard worked in the QA division of Zack. He observed many serious QA problems. When he requested and received a promise of anonymity from Mr. Leonard of MPOAD, he disclosed this information to him. Subsequently, he was fired. Therefore, his qualifications stem from his personal experience with the operation of QA at Zack and the Applicant.

Interrogatory 7 - Contention 8(dealing with the non-conformance report filed by Zack on or about August 4, 1982.)

a. This non-conformance report deals with the fact that two sets of records-- a shop record and a QA record--which are kept to guarantee the integrity of the welds must be signed by the same person. They were, in fact, signed by two different persons. This violates the federal standards for documentation for safety-related systems in a nuclear power plant.

The non-conformance report, as well as all other documents obtained by discovery, and any newly developed information will be relied upon to determine these facts.

b. Albert Howard will testify to whatever extent he can on this. Also I expect the NRC to provide a knowledgeable witness, pursuant to CFR 2.720(h)(2)(i) Interrogatory 7-Contention 16(deals with Zack non-conformance report and defective Travelers]

a. Zack's non-conformance report filed in August, 1982, disclosed that 140 Travelers showed unverified welder qualifications for fabrication welds.

b. Same as Interrogatory 7-Contention 8-b.

c. Same as for b.

Interrogatory 8 (Contention 6)

Albert Howard will rely on his affidavit and exhibits, all documents obtained by discovery, and any new information that is developed. Any NRC witness will rely on same.

Interrogatory 8 (Contention 8)

Same as Interrogatory 8 (Contention 6).

Interrogatory 8 (Contention 16)

Same as Interrogatory 8 (Contention 6).

Interrogatory 9

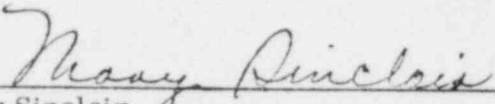
Albert Howard's qualifications are discussed in response to Interrogatory 7a, Contention 6, p.5. The NRC can provide qualifications on other witnesses.

Interrogatories 10, 11 and 12 not applicable here.

Interrogatory 14

The people who contributed to this last set of interrogatories for Contention 6, 8 and 16 are Lee Bishop, Diane Hebert, Barbara Stamiris and Mary Sinclair.

Respectfully submitted,



Mary Sinclair

cc: Secretary, U.S. Nuclear Regulatory Commission
Michael J. Miller, Esq.
William Paton, Esq.
Mr. Wendell Marshall
Ms. Barbara Stamiris
James E. Brunner
Lee Bishop
Myron Cherry

September 20, 1978

Memo to Gregg Taylor
Attorney General's Office

As you requested on September 14, I am writing an account of the information developed at the fact-finding meeting that took place between representatives of the Nuclear Regulatory Commission and the Midland County Planning and Road Commissions on September 7, 1978.

Clifford Steff of the Midland Planning Commission met with NRC people in A.M. Gordon Solberg, chief engineer of the Road Commission, and William Fortier, his assistant engineer, met with them in the afternoon. Observers included a Consumers Power Company representative, Ron Cook, and Mary Sinclair. Pat Race was present from about 1-2:00 p.m.

General Information Discussed

Growth of Midland planned for northwest direction. Approximately 300 permanent workers will be operating the nuclear facilities on round-the-clock shifts.

The present population of the City of Midland is 36,900—the total County population is 67,000.

Evacuation and Rad Waste Transportation

Questions were asked by the NRC about what routes had been planned for evacuation and rad waste transportation.

Both Clifford Steff and the road engineers said they hadn't given either of these matters much thought. Speculation at both meetings indicated that the Eastman Road interchange exit to the freeway would be most likely to be used in the event of a release of radioactivity requiring evacuation. Stark and Waldo road exits were also mentioned.

Gordon Solberg said that while the Eastman exit would be the most likely to be used, it is also the area at which

most accidents occur in Midland because of the poor design of that interchange.

William Olmstead, NRC attorney, asked whether 12,000 people could be evacuated in an hour. No one knew.

The engineer said he has not been involved in evacuation route planning. He has not studied the evacuation time for city and county.

Both Clifford Steff and the engineers said they had not thought about the directions for radioactive waste transportation out of the plant site.

Cooling Pond Effects.

James Carson, meteorologist from the Argonne National Laboratories, stated that the people in the area of the cooling pond would be subjected to hundreds of hours of steam fog from the cooling pond every winter in their homes. They can expect icing on their houses, trees and animals.

Much additional snow will be generated in the area.

(The radioactive effluents that are released to the pond will rise with the fog and be rained or snowed out in the area. This was part of the testimony of Dr. Edward Epstein, meteorologist at the University of Michigan, during the construction license hearings.)

These data are based on observations in the area of the cooling pond for the Dresden plant in Illinois which has been operating for some time. Mr. Carson said that the Midland pond with its two plants will be much hotter.

The Dresden pond covers 1,273 acres, while the Midland pond is 880 acres.

At the Dresden pond, the water is running 90° hotter than the outside temperature, according to Carson. When it is -20° the pond is measuring 70°. Fog plumes up to five miles

long have been observed at Dresden.

The severe fogging that will go to zero visibility will require that roads, especially Gordonville Road, will have to be very well marked. Gordonville Road will have to be widened to allow for more maneuverability. Carson suggested flashing lights be installed to warn motorists that they are going into a heavy fog area where zero visibility was possible. He asked about the possibility of closing Gordonville Road when the fog is especially heavy.

The NRC, in its advance comments and questions, pointed out that Bechtel had used fogging data from a pond in Arizona to calculate fog effects at the construction license phase. These are not appropriate or comparable to fog effects in the Midwest.

Ron Cook, who is the resident inspector at the Midland n-plants, said he had visited the Dresden area during fogging and the residents called the road near the pond, "suicide road."

Carson said that Commonwealth Edison that operates the Dresden n-plants has made an in-depth study of the cooling pond effects, but has not released it. When he was asked why, he said, "Because they could be sued for those effects."

M. Sinclair