

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
) Docket No. 50-155-OLA
CONSUMERS POWER COMPANY) (Spent Fuel Pool
) Expansion)
(Big Rock Point Nuclear Power Plant))

ANSWERS OF CONSUMERS POWER COMPANY
TO INTERROGATORIES (SET II) PROPOUNDED BY
CHRISTA-MARIA, ET AL.

Pursuant to 10 C.F.R. § 2.740(a), Consumers Power Company ("Licensee") submits answers to General Interrogatories 1-5 of the interrogatories (Set II) propounded by Christa-Maria, et al.

GENERAL

Interrogatory 1

With regard to each contention and Board question admitted for litigation in this proceeding by the Atomic Safety and Licensing Board in its "ORDER FOLLOWING SPECIAL PREHEARING CONFERENCE" dated January 17, 1980, or its "MEMORANDUM AND ORDER REGARDING TWO ADDITIONAL BOARD QUESTIONS" dated March 27, 1980:

(a) Identify each person whom the Licensee expects to call as an expert witness in respect of such contention or Board question;

(b) State the subject matter on which the expert witness is expected to testify;

(c) State the substance of the facts and opinions to which the expert witness is expected to testify and summarize the grounds for each opinion;

(d) Identify all documents relied upon or examined by the expert witness in answering subparagraph (c) above;

(e) Identify all documents not identified in subparagraph (d) above which the expert witness expects to put into evidence or to rely upon in support of his or her testimony in this proceeding.

Christa-Maria Contention 2 and O'Neill Contention II-A

A. Answer

- (a) Charles Axtell, Roger Sinderman, Ronald Voll, all of Consumers Power Company; William Bell, of NUS Corporation.
- (b) Charles Axtell will address radiation protection measures at the Big Rock Point Plant. Roger Sinderman and/or William Bell will testify as to radiation source terms from the spent fuel pool during and after installation of the new racks. Ronald Voll may be asked to testify as to fuel performance in water storage at the Big Rock Point Plant.
- (c) Charles Axtell is expected to testify that radiation protection measures at the Big Rock Point Plant are adequate to achieve compliance with 10 C.F.R. Part 20 and Appendix I to 10 C.F.R. Part 50, as well as the as-low-as-reasonably-achievable standard.

His testimony is primarily based on his experience as Plant Health Physicist. Roger Sinderman and/or William Bell are expected to testify that the south wall will provide adequate shielding. The bases for their opinions are given in Consumers Power Company's response to Christa-Maria Interrogatory 2-1 (Set I).

Subject to a determination of need by counsel, Ronald Voll may address the mechanisms by which fuel assemblies develop defects and the propensity of the various types of fuel stored in the Big Rock Point Plant to develop such defects.

- (d) See the documents referred to in Interrogatory 2-1 (Set J).
- (e) Mr. Axtell plans to introduce a number of color photographic slides of the spent fuel pool area as part of his testimony. These slides have not yet been taken.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Mr. Axtell and Mr. Sinderman are drafting their testimony.

Christa-Maria Contention 3 and O'Neill Contention I-B-5

A. Answer

- (a) A. John Birkle, Consumers Power Company.
- (b) Corrosion.
- (c) Mr. Birkle is expected to testify that corrosion degradation of the spent fuel and spent fuel storage racks in the Big Point Plant spent fuel pool is unlikely, based on experience with the materials involved, the good water quality, and the low static, thermal and fatigue cyclic loads.
- (d) 1. J. R. Weeks, "Corrosion of Materials in Spent Fuel Storage Pools, BNL-NUREG 23021 (July 1977).
2. Staehle, Beck and Fontana, "Mechanism of Stress Corrosion of Austenitic Stainless Steel in Chloride Waters," Corrosion-National Association of Corrosion Engineers, Vol. 15, p. 373 (1958).
3. "Proceedings of Conference, Fundamental Aspects of Stress Corrosion Cracking," (September 11-15, 1967), Ohio State University.
4. Draley, Mori and Loess, "The Corrosion of 1100 Aluminum in Oxygen-Saturated Water at 70° C," Journal of the Electrochemical Society, Vol. 110, No. 6 (1963).

5. Draley, Mori, and Loess, "The Corrosion of 1100 Aluminum in Water from 50° to 95°C," Journal of the Electro-chemical Society, Vol. 114, No. 4 (1967).
6. Johnson, "Behavior of Spent Nuclear Fuel in Water Pool Storage," BNWL-2256 (1977).

Copies of the foregoing documents are to be provided under separate cover as soon as possible.

(e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Mr. Birkle is drafting his testimony.

Christa-Maria Contention 8 and O'Neill Contention III-E-2
(as rewritten by the Board)

A. Answer

- (a) Dave Blanchard, Consumers Power Company, Daniel A. Prelewicz, NUS Corp., R. Sacramo, NUS Corp.
- (b) Mr. Blanchard will discuss providing make-up water to the spent fuel pool. Dr. Prelewicz will discuss spent fuel pool boiling and the pool wall temperature history under boiling conditions. Mr. Sacramo will discuss the structural integrity of the spent fuel pool concrete, liner, and storage racks during prolonged boiling conditions.

- (c) Mr. Blanchard is expected to testify that, following minor modifications, water can be added from the core spray system to the spent fuel pool at a rate sufficient to make up for evaporative losses expected under the circumstances described in this contention.

Dr. Prelewicz is expected to testify as to the boil-off rate from the spent fuel pool and the temperature of the concrete walls of the spent fuel pool as a function of time.

Mr. Sacramo is expected to testify that the integrity of the racks, the liner, and the concrete spent fuel pool itself will be maintained during the thermal loading conditions associated with pool boiling.

- (d) 1. "Structural Analysis of the Spent Fuel Pool Liner and Concrete Due to Coolant System Failure for the Big Rock Point Nuclear Power Plant," NUS-3567, dated April 18, 1980; a related thermal analysis of the spent fuel pool wall (NUS File No. 5148-SA-A3); and attached transmittal letter from Antonucci to Larsen dated April 23, 1980.
2. Letter dated April 24, 1980, from Antonucci of NUS to Larsen noting a correction to the report described in 1. above.

3. Two Internal Memoranda from R. Sacramo to G. Antonucci: No. EMD-RFS-013 dated May 12, 1980, and No. EMD-RFS-014 dated May 16, 1980; and a transmittal letter from Antonucci to Larsen of Consumers Power Company dated May 20, 1980.
4. Letter dated June 20, 1980, from Hoffman of Consumers Power Company to Crutchfield of the NRC Staff, which transmitted items 1. and 3. to the NRC Staff.

All of the documents listed above have previously been provided to the Board and all parties by a letter from J. Gallo dated July 24, 1980.

(e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Messrs. Blanchard, Prelewicz, and Sacramo are drafting their testimony. Mr. Blanchard is conducting an engineering analysis to confirm that make-up water can be added to the spent fuel pool from the core spray line.

Christa-Maria Contention 9

A. Answer

(a) - (e) This contention was admitted conditionally by the Licensing Board, and its ultimate admissibility as a contention in this proceeding is subject to Christa-Maria, et al., establishing a nexus between emergency plan matters and this proceeding involving the expansion of the spent fuel pool capacity. Therefore, Licensee has not identified any witnesses to deal with this matter and does not plan to do so until the necessary showing of nexus has been made.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

See responses to Christa-Maria, et al., Interrogatories, Set I and Set II.

O'Neill Contention II-B

A. Answer

(a) Don DeMoor, Consumers Power Company, Carl Larsen, Consumers Power Company.

- (b) Mr. DeMoor and/or Mr. Larsen will explain the incidents referred to in this contention.
- (c) Mr. DeMoor and/or Mr. Larsen will show that none of these incidents involved leaks from the spent fuel pool, or uncontrolled releases to the environment. Therefore, no environmental hazards exist.
- (d) See the documents identified in O'Neill Contention II-B
- (e) None.

B. Documents Relied Upon

See the documents referred to in (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

O'Neill Contention II-C

A. Answer

- (a) Dave Blanchard, Consumers Power Company.
- (b) Mr. Blanchard will discuss the engineering aspects of this contention.
- (c) Mr. Blanchard is expected to testify that a leak rate of up to 200 gpm from the spent fuel pool is not credible, but if such a leak were to occur, the fire water system could replace such water. It is believed that the water lost from the pool

could be recirculated from the building sump to the spent fuel pool using the core spray pumps. This water would not be released to the environment.

(d) Design and Safety Analysis Report, Dated April 1979.

(e) None.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Mr. Blanchard will be pursuing the engineering analysis necessary to demonstrate that the core spray pumps will be able to pump water from the containment sump through the fire water system to the spent fuel pool. He will then draft his testimony based on that analysis.

O'Neill Contention II-D

A. Answer

(a) - (e) At the present time Licensee does not intend to call any witnesses with respect to this contention. Instead it will rely on expert testimony provided by the NRC and the U.S. Air Force.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

O'Neill Contention II-E-3

A. Answer

- (a) Dr. Y. S. Kim, NUS Corp., R. Voll, Consumers Power Company.
- (b) Dr. Kim will address the criticality analysis for the Big Rock Point spent fuel pool. Mr. Voll will testify as to the type of fuel present at the Big Rock Point Plant.
- (c) Dr. Kim's testimony will show that criticality will not occur in the Big Rock Point Plant spent fuel pool if there is no gross distortion of the racks. The basis for his opinion has previously been explained in Licensee's responses to Interrogatories 9-22 through 9-28 and 9-30, Set I.
- (d) 1. See the documents identified in Licensee's responses to Interrogatories 9-22 through 9-28 and 9-30 (copies previously provided).

2. Transmittal, C.L. Larsen to NUS, "Big Rock Point - Spent Fuel Racks, Table Reload Fuel Types." File 5803, dated April 9, 1980 (copy previously provided).

(e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Dr. Kim is drafting testimony in respect of this contention.

O'Neill Contention II-E-4

A. Answer

(a) F. Buckman, Consumers Power Company, D. Blanchard, Consumers Power Company, R. Sinderman, Consumers Power Company.

(b) Mr. Buckman and/or Mr. Blanchard will address the worst credible accident associated with the expanded spent fuel pool. Mr. Sinderman, utilizing the source term derived from the worst credible accident involving the spent fuel pool, will address the adequacy of the shielding provided by the containment building.

(c) Mr. Buckman and/or Mr. Blanchard will testify that the worst credible accident related to the spent fuel pool is a cask drop accident. Further, they will show that the consequences of such an accident cannot exceed the crushing of 441 spent fuel assemblies, and in particular that a loss of water accident in the spent fuel pool is not credible.

Mr. Sinderman will show that the containment provides adequate shielding to protect the public health and safety from radioactive source terms associated with the accident described by Mr. Buckman and/or Mr. Blanchard.

(d) See the documents identified in Licensee's responses to Interrogatories 9-18 through 9-21, Set I [Documents related to Safety Sling].

(e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Testimony on this contention is being drafted.

O'Neill Contention II-F

A. Answer

- (a) Roger Sinderman, Consumers Power Company.
- (b) Radiological releases from Big Rock Point Plant and 10 C.F.R. Part 50, Appendix I.
- (c) Mr. Sinderman's testimony will show that quantities of radioactive material in effluents resulting from the operation of the Big Rock Point Plant, with the expansion of fuel storage capacity, will remain as low as reasonably achievable, and that limitation on the quantity of each effluent released take into account appropriate bioaccumulation factors so that the numerical dose objectives of Appendix I are not exceeded.
- (d) U.S. NRC Regulatory Guide 1.109, U.S. NRC Regulatory Guide 1.111 and CPCo Appendix I submittal to NRC. The latter document will be furnished as a part of a submission to the Licensing Board in the near future.
- (e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Mr. Sinderman is drafting his testimony on this contention.

O'Neill Contention II-G

- (a) Don DeMoor, Consumers Power Company, Dave Blanchard, Consumers Power Company.
- (b) Mr. DeMoor and/or Mr. Blanchard will discuss administrative controls at the Big Rock Point Plant associated with the handling of spent fuel in and around the spent fuel pool. Mr. Blanchard will discuss the "fuel escape" incident referred to in this contention.
- (c) Mr. DeMoor will show that the administrative controls to be used during rack replacement will be effective. Mr. Blanchard will show that the "fuel escape" incident referred to in this contention was the result of a handling error during examination of fuel rods within an assembly which had been removed from the old racks. The fuel rod to which this contention refers did not "escape" from the old racks and, therefore, the incident is not relevant to the design of the new racks.
- (d) None.
- (e) None.

B. Documents Relied Upon

See response to (d) above.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Mr. DeMoor and Mr. Blanchard are drafting testimony.

O'Neill Contention VII

A. Answer

(a) - (e) This contention was admitted conditionally by the Licensing Board subject to a specific identification by Mr. John O'Neill of the specific alleged mismanagement incidents. Therefore, Licensee has not yet assigned a witness to answer this matter and does not plan to do so until Mr. O'Neill has identified the incidents of mismanagement upon which he relies.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

March 27, 1980, Additional Board Question No. 1
(Concerning Valves):

March 27, 1980, Additional Board Question No. 2
(Concerning Oyster Creek):

A. Answer

(a) Roger Huston and/or Dave Blanchard, Consumers
Power Company.

- (b) Mr. Huston and/or Mr. Blanchard will discuss whether Big Rock Point Plant could be susceptible to an incident such as that which occurred at Oyster Creek on May 2, 1979.
- (c) Mr. Huston and/or Mr. Blanchard will testify with respect to Licensing Board Question No. 2, that Big Rock Point operating procedures have been changed to make the reactor vessel low-level alarm a safety limit and to require that one recirculating loop be left open at all times to ensure adequate communication between the steam drum and the lower reactor vessel plenum to prevent a redistribution of coolant inventory which might uncover the reactor core.

Mr. Huston and/or Mr. Blanchard will also address the operational history of the valves identified in Licensing Board Question No. 1.

- (d) LER for Oyster Creek; Staff Assessment of Amendment No. 30 to BRP Operating License. These documents will be provided under separate cover as soon as possible.
- (e) None.

B. Documents Relied Upon

See documents identified in (d) above.

C. Documents Reviewed But Not Relied Upon

Letter from Harold R. Denton to Ms. Bier and Ms. Johns dated March 5, 1980

D. Further Activities

Mr. Huston is drafting his testimony.

Interrogatory 2

Answer Interrogatory 1 above with respect to each contention identified as being withdrawn subject to reassertion in the Atomic Safety and Licensing Board's "ORDER FOLLOWING SPECIAL PREHEARING CONFERENCE," dated January 17, 1980.

A. Answer

Licensee has not assigned any witnesses to address contentions withdrawn subject to reassertion and does not plan to do so until and unless those contentions are reasserted.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

Interrogatory 3

With respect to each contention and Board question admitted in litigation in this proceeding:

(a) Identify any person having knowledge of the facts relating to such contention or Board question (other than the expert witnesses identified in response to Interrogatory 1). This question is limited to those persons whom the Licensee expects to call as witnesses other than expert witnesses in this proceeding, or with whom the Licensee has consulted or expects to consult in connection with this proceeding.

(b) For each person who has been consulted, state when he or she was consulted and summarize the substance of any facts or opinions communicated by such person to the Licensee relating to the subject matter of any contention or Board question.

(c) If the Licensee expects to call any person identified in response to Interrogatory 3(a) above to testify, state the substance of his or her testimony, summarize the basis for any opinions contained in such testimony, and identify all documents which will be introduced as evidence or relied upon by such person in such testimony.

A. Answer

Licensee does not expect to call any witnesses other than expert witnesses to testify in this proceeding.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

Interrogatory 4

Answer Interrogatory 3 above with respect to each contention identified as being withdrawn subject to reassertion in the Licensing Board's "ORDER FOLLOWING SPECIAL PREHEARING CONFERENCE," dated January 17, 1980.

A. Answer

Licensee does not expect to call any witness other than expert witnesses to testify in this proceeding.

B. Documents Relied Upon

None.

C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

None.

Interrogatory 5

Identify all documents which the Licensee expects to introduce in evidence or use for impeachment or other cross-examination purposes in this proceeding, other than those identified in the responses to the previous interrogatories.

A. Answer

Licensee has not yet identified any documents, other than those identified in its responses to Christa-Maria's interrogatories (Set I and II) which it expects to introduce in evidence or use for impeachment or other cross-examination purposes.

B. Documents Relied Upon

None.


C. Documents Reviewed But Not Relied Upon

None.

D. Further Activities

Licensee is preparing testimony which may lead to the identification and disclosure of documents called for by this interrogatory. In addition, responses by Intervenors Christa-Maria and O'Neill to Licensee's

discovery requests may lead to the identification and disclosure of cross-examination materials.



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) Docket No. 50-155-OLA
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CERTIFICATE OF SERVICE

I hereby certify that copies of CONSUMERS POWER COMPANY'S ANSWERS TO INTERROGATORIES (SET II) PROPOUNDED BY CHRISTA-MARIA, ET AL. in the above-captioned proceeding were served on the following by deposit in the United States mail, first-class postage prepaid, this 20th day of May, 1981.

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