

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

7/15/80

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSUMERS POWER COMPANY

(Big Rock Point Nuclear Power
Station)

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Docket No. 50-155

(Spent Fuel Pool Modification)

NRC STAFF RESPONSE TO CHRISTA-MARIA, ET AL.,
INTERROGATORIES TO THE NRC STAFF

In accordance with 10 C.F.R. §§ 2.720 and 2.744, the Staff of the Nuclear Regulatory Commission (Staff) hereby responds to Christa-Maria, et al. Interrogatories to the NRC Staff dated June 26, 1980. Each of Christa-Maria's interrogatories is restated and a response is provided. Following the responses are affidavits identifying the individuals who prepared the responses and verifying them.

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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 Staff 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.

Response

Listed below are those contentions admitted in this proceeding concerning which the Staff has identified the persons expected to present testimony. The Staff is unable at this time to provide the names of persons who will testify concerning the contentions and Board questions not so listed. The persons expected to testify concerning the listed contention are identified below. However, the designation of witnesses could change. Attached are statements of professional qualifications for these witnesses.

Contentions

Witness(es)

Christa-Maria

2

Jack N. Donohew, Jr.

3

John R. Weeks

Christa-Maria Contention 8 and
John O'Neill, II, Contention IIE-2

Edward Lantz

John O'Neill, II

IB-5

Weeks

IIA

Donohew/Jacques S. Boegli

IIB

Donohew

IIE-3

Lantz

IIE-4

Donohew

IIF

Donohew/Boegli

IIG

Donohew

In addition the Staff may call Mr. Walter A. Paulson, who is serving as project manager for this project, as an additional witness on any of the contentions or Board questions.

The Staff testimony has not been prepared, and, therefore, the substance of that testimony cannot be provided. When the preparation of the testimony is completed, that testimony will be served upon the parties in accordance with the schedule adopted by the Licensing Board by Order dated January 17, 1980.

This response was prepared by Janice E. Moore.

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.

Response

Since the contentions mentioned in this interrogatory have not been admitted as matters in controversy in this proceeding, the Staff has not designated expert witnesses to testify concerning them.

This response was prepared by Janice E. Moore.

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 Staff expects to call as witnesses other than expert witnesses in this proceeding, or with whom the Staff 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 Staff relating to the subject matter of any contention or Board Question.
- (c) If the Staff 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 support of such testimony.

Response

- (a) The Staff does not intend to call anyone as a witness in this proceeding who is not an expert witness. Dr. Weeks will be an expert witness for the Staff. See Interrogatory 1.
- (b) Dr. John R. Weeks of Brookhaven National Laboratory was consulted on November 20, 1979 in connection with this proceeding.
- (c) Not applicable.

This response was prepared by Janice E. Moore.

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.

Response

See Interrogatory 2 above.

This response was prepared by Janice E. Moore.

Interrogatory 5

Identify all documents which the Staff 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.

Response

The Staff intends to introduce into evidence those documents prepared by it upon completion of the review of the license amendment application. The Staff also intends to provide the testimony of various expert witnesses concerning the contentions and Board questions admitted as matters in controversy in this proceeding. See Interrogatory 1. Every document introduced into evidence by any party to the proceeding, documents obtained as a result of discovery, general treatises on pertinent technical subjects, and any other documents obtained during the course of this proceeding by Staff Counsel, may be used for impeachment or other cross-examination purposes in this proceeding. A more specific response identifying the documents to be used for such purposes would require disclosure of Staff Counsel's work product in the form of mental processes, impressions, or legal theories. The discovery of such matters is prohibited by 10 C.F.R. §2.740(b)(2) of the Commission's regulations.

This response was prepared by Janice E. Moore.

Interrogatory 6

Please identify and provide copies of all NRC Staff memoranda, reports or other documents or memoranda discussing the progress of the Systematic Evaluation Program at the Big Rock Plant. Please include any reports or other documents or memoranda that discuss the progress of the SEP in general, without specific reference to Big Rock.

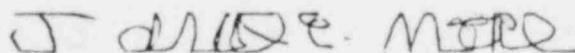
Response

The following documents discuss the progress of the Systematic Evaluation Program (SEP) in general, the progress of said program with respect to the Big Rock Point Plant, and provide definitions of the topics involved in the SEP to aid in interpretation of the enclosed status reports:

1. Briefing on Systematic Evaluation Program, meeting held on May 6, 1980.
2. Topic Status Listing
3. Definitions of Topics in Systematic Evaluation Program

The documents provided in response to this Interrogatory were identified by Walter A. Paulson.

Respectfully submitted,



Janice E. Moore
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 15th day of July, 1980.

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NUCLEAR REGULATORY COMMISSION

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In the Matter of

CONSUMERS POWER COMPANY

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Docket No. 50-155

(Spent Fuel Pool Modification)

AFFIDAVIT OF JANICE E. MOORE

I, Janice E. Moore, being first duly sworn, do depose and state:

1. I am an attorney in good standing admitted to practice before the court of the District of Columbia. I hold the position of Staff Attorney in the Office of the Executive Legal Director of the Nuclear Regulatory Commission and serve as Staff Counsel in this proceeding.
2. The answers to Christa-Maria, et al., Interrogatories 1 through 5 were prepared by me.

I hereby certify that the answers given by me are true and accurate to the best of my knowledge, information, and belief.

JANICE E. MOORE
Janice E. Moore

Subscribed and sworn to
before me this 14th day of July, 1980.

Elizabeth Ann Lypton
Notary Public

My Commission expires: July 1, 1982

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Docket No. 50-155

(Spent Fuel Pool Modification)

AFFIDAVIT OF WALTER A. PAULSON

I, Walter A. Paulson, being first duly sworn, do depose and state:

1. I am the Nuclear Regulatory Commission Project Manager for the Big Rock Point Plant, Division of Licensing, Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission, Washington, D. C. 20555.
2. I identified the documents listed in response to Christa-Maria, et al., Interrogatory 6.

I hereby certify that the information given by me is true and accurate to the best of my knowledge and belief.

Walter A. Paulson

Walter A. Paulson

Subscribed and sworn to
before me this 14th day of July, 1980.

Elizabeth Ann Lystra

Notary Public

My Commission expires: July 1, 1982

PROFESSIONAL QUALIFICATIONS
OF
WALTER A. PAULSON

I am the Nuclear Regulatory Commission Project Manager for the Big Rock Point Plant as well as one other nuclear power plant. As a Project Manager I manage and participate in the review and evaluation of safety and environmental considerations associated with the design and operation of nuclear power facilities, especially those licensed for operation. I also currently manage and participate in the Systematic Evaluation Program which involves a comprehensive review and evaluation of older operating facilities to determine and document the acceptability of departures from current licensing requirements.

I received a Bachelor of Chemical Engineering Degree from Pratt Institute in 1957. In 1959, I received a Master of Science Degree in Nuclear Science and Engineering from Rensselaer Polytechnic Institute.

From 1958 to 1962 I was employed by E. I. duPont de Nemours at the Savannah River Plant and held the position of Chemical Engineer with responsibilities in the areas of heat transfer, fluid flow, instrumentation, and fuel element operational performance. From 1962 to 1973 I was employed by the National Aeronautics and Space Administration at the Lewis Research Center in Ohio. I held positions as nuclear engineer in heat transfer, fluid flow and shielding design, and supervisory nuclear engineer in these areas.

In May 1973, I joined the Nuclear Regulatory Commission (formerly AEC) as a Licensing Project Manager. I have also held the positions of Research Analyst, Technical Assistant, and Operating Reactors Project Manager.

EDWARD LANTZ

DIVISION OF OPERATING REACTORS

U.S. NUCLEAR REGULATORY COMMISSION

PROFESSIONAL QUALIFICATIONS

As an Engineering Systems Analyst in the Plant Systems Branch I am responsible for technical reviews and evaluations of component and system designs and operating characteristics of licensed nuclear power reactors.

I have a Bachelor of Science degree in Engineering Physics from the Case Institute of Technology and a Masters of Science degree in Physics from Union College and a total of 29 years of professional experience, with over 20 years in the nuclear field. My experience includes work on reactor transients and safeguards analysis, nuclear reactor analysis and design, research and development on nuclear reactor and reactor control concepts and investigations of their operational and safety aspects.

I have held my present position with the Commission since December 1975. My previous position, which I held for about two and one half years, was Project Manager in the Gas Cooled Reactors Branch, Division of Reactor Licensing, U. S. Nuclear Regulatory Commission, where I was responsible for the technical review, analysis, and evaluation of the nuclear safety aspects of applications for construction and operation of nuclear power plants. For about ten years prior to that I was Head of the Nuclear Reactor Section in NASA. My section was responsible for the development and verification of nuclear reactor analysis computer programs, conceptual design engineering, and development engineering contracting. Prior to my employment with NASA, I was a nuclear engineer at the Knolls Atomic Power Laboratory for about six years, where I worked on the safeguards and nuclear design of the S3G reactors and the initial development of the nuclear design of the S5G reactors. Previous experience includes system engineering and electrical engineering with the General Electric Company and electronic development engineering with the Victoreen Instrument Company.

Jacques S. Boegli
Professional Qualifications
Effluent Treatment Systems Branch
Office of Nuclear Reactor Regulation

My name is Jacques S. Boegli. I am a Senior Nuclear Engineer in the Effluent Treatment Systems Branch in the Office of Nuclear Reactor Regulation. I attended Case Institute of Technology and received a Bachelor of Science Degree in Chemical Engineering from Indiana Technical College in 1951. In 1952, I received a Master of Science Degree in Chemical Engineering from Kansas State College. From 1955 to 1956 I completed advanced courses in chemical and nuclear engineering at the University of Michigan and applied Health Physics training at the Oak Ridge National Laboratory.

From 1953 to 1973 I was employed by the National Aeronautics and Space Administration and held positions as research engineer in heat and mass transfer, design engineer in nuclear reactor coolant, utilities, ventilation and radwaste systems, process systems supervisor, and technical consultant at the NASA Plum Brook Reactor in Ohio.

In July 1973, I joined the Nuclear Regulatory Commission (formerly AEC) as a Senior Nuclear Engineer in the Effluent Treatment Systems Branch, Division of Technical Review. In this position I am responsible for the review and evaluation of radwaste treatment systems and for the calculation of releases of radioactivity from nuclear power reactors. The duties involve developing analytical models and performing calculations on the effectiveness of proposed radwaste systems, studying technical improvements and developing criteria governing radwaste processing, monitoring, shielding and handling.

PROFESSIONAL QUALIFICATIONS

OF

JOHN R. WEEKS

I am currently a metallurgist at Brookhaven National Laboratory, (BNL), where I have been employed since 1953. My present title is Leader, Corrosion Science Group, in the Department of Nuclear Energy. My current responsibilities include experimental investigations on the mechanisms of stress corrosion cracking and pitting corrosion of stainless steels and Inconel, and providing technical assistance to the U.S. Nuclear Regulatory Commission (NRC) in the area of corrosion and coolant chemistry in light water reactors. I am a participating consultant on the NRC Pipe Crack Study Group. I also am Chairman of the BNL Reactor and Critical Experiments Safety Committee, and represent the Department of Nuclear Energy on the BNL Council.

Since joining Brookhaven I have performed and supervised research on materials behavior in both liquid metal and water cooled reactors. From 1970 to 1972 I headed Brookhaven's program on liquid sodium technology. I have been materials advisor to the Reactor Division at BNL since 1959. I was keynote lecturer in 1966 at the International Atomic Energy Agency Symposium on Alkali Metal Coolants, and served in 1967-1969 as a U.S. delegate at the US-UK information exchanges on corrosion of reactor materials. I was a consultant to Aerojet General on the SNAP-8 project.

I was an adjunct associate professor of materials science at SUNY - Stony Brook in 1962-1963, and am currently an adjunct professor of Metallurgy and Nuclear Engineering at the Polytechnic Institute of New York. From 1972 to 1974 I was on assignment to the U.S. Atomic Energy Commission as a senior metallurgist in the Materials Engineering Branch, Directorate of Licensing. In 1974-1975, I served on the AEC (later NRC) Task Force investigating the causes of the stress corrosion problems in BWR piping.

My academic qualifications include a Met. E. degree from the Colorado School of Mines in 1949, a M.S. in 1950, and a Ph.D. in 1953 in Metallurgy from the University of Utah. I am a member of the American Society for Metals, for which I have been Chairman of the Long Island chapter, the Metallurgical Society of AIME, for which I have served as Chairman of the Nuclear Metallurgy Committee, and the American Nuclear Society. I am the author or co-author of approximately sixty-five publications in the areas of my research.

PROFESSIONAL QUALIFICATIONS

OF

JACK N. DONOHEW, JR.

My name is Jack N. Donohew, Jr. I am a Senior Nuclear Engineer in the Environmental Evaluation Branch in the Division of Operating Reactors, U.S. Nuclear Regulatory Commission (NRC). My duties include the review of rad-waste treatment systems and engineered safety feature ventilation systems for operating reactors.

I received a Bachelor of Engineering Physics Degree from Cornell University in 1965, a Masters of Science Degree in Nuclear Engineering from Massachusetts Institute of Technology in 1968, and a Doctor of Science Degree in Nuclear Engineering from Massachusetts Institute of Technology in 1970. I received my Professional Engineers License in Nuclear Engineering from the Commonwealth of Pennsylvania in 1974.

After graduation, I worked for Stone and Webster Engineering Corporation as an engineer in the Radiation Protection Group. I was responsible for estimating source terms, release rates and resulting doses for the Safety Analysis Report, Environmental Report and response to NRC questions for boiling water nuclear reactors. I was also responsible for shielding design for the reactor water cleanup system.

In February, 1973, I became a Power Engineer in the Process Engineering Group, Stone and Webster Engineering Corporation. I was lead engineer for the Shorcham Project and the equipment specialist for all nuclear plants for the containment iodine spray removal system, ventilation filter assemblies, and Boiling Water Reactor and Pressurized Water Reactor gaseous waste treatment system.

In June, 1975, I joined the Nuclear Regulatory Commission as a senior nuclear engineer in the Effluent Treatment Systems Branch, Directorate of Licensing. I was involved in rad-waste system licensing reviews of nuclear power plants. I have conducted generic studies of the degradation of charcoal adsorbers in ventilation filter assemblies.

In December, 1975, I joined the Environmental Evaluation Branch in the Division of Operating Reactors.

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NUCLEAR REGULATORY COMMISSION

BOARD OF THE ATOMIC SAFETY AND LICENSING BOARD

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Station))	(Spent Fuel Pool Modification)

CERTIFICATE OF SERVICE

I hereby certify that copies of NRC STAFF RESPONSE TO CHRISTA-MARIA, ET AL., INTERROGATORIES TO THE NRC STAFF, 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 15th day of July, 1980.

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Washington, D. C. 20555

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