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RESPONSE

June 11, 1984

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USNRC

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Sheldon J. Wolfe, Chairman  
Administrative Judge  
Atomic Safety & Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dr. James C. Lamb, III  
Administrative Judge  
313 Woodhaven Road  
Chapel Hill, NC 27514

Dr. David L. Hetrick  
Administrative Judge  
Department of Nuclear Engineering  
University of Arizona  
Tuscon, Arizona 85721

In the Matter of  
METROPOLITAN EDISON COMPANY, ET AL.  
(Three Mile Island Nuclear Station, Unit No. 1)  
Docket No. 50-289  
(Steam Generator Repair)

Dear Administrative Judges:

This letter is submitted in response to p. [redacted] of your Order of June 1, 1984.

Pursuant to the directives of that Order, Staff counsel has conferred with Mr. Bruce Churchill, counsel for Licensee, and with Ms. Joanne Doroshow, representative of TMIA. I am authorized on behalf of these parties to state that none of the parties sees a need for a further prehearing conference in this case.

I am further authorized to state that the parties are in agreement that the hearing on those portions of TMIA's Contentions 1.a and 1.b which have survived the motions for summary disposition should be held commencing on July 16, 1984, with all direct testimony to be filed by June 29, 1984.

The Staff intends to call the following Staff witnesses:

Conrad E. McCracken  
Paul C.S. Wu

Copies of their professional qualifications are attached. Messrs. McCracken and Wu will be testifying as a panel on the remaining portions of both TMIA Contention 1.a, and TMIA Contention 1.b. In addition to Messrs. McCracken and Wu, the Staff is considering calling Mr. Louis Frank and/or Mr. S. Stanley Kirslis; copies of their professional qualifications also are attached.

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TMIA will be responding directly to the Board on (c) and (d) of paragraph 3 of the Board's Order, and Licensee will be responding directly to (d) of paragraph 3.

Sincerely,

Mary E. Wagner  
Counsel for NRC Staff

cc: Service list

Enclosures: As stated

DS07 RB

OFF :	CELD <i>Maw</i>	: CELD	:	:	:	:	:
NAME :	MWagner/rb	: JGray	:	:	:	:	:
DATE :	6/11/84	: 6/11/84	:	:	:	:	:

Conrad E. McCracken  
Professional Qualifications

I am Section Chief of the Chemical Technology Section in the Chemical Engineering Branch of the Division of Engineering, Office of Nuclear Reactor Regulation. My responsibilities in this position include supervision of the evaluation of all PWR's for compliance with chemistry and corrosion requirements of the Commission. Specifically, this includes evaluating the chemistry and corrosion control measures that are instituted to minimize corrosion of steam generator materials. I have served in this capacity since April 1982. Between February 1981 and April 1982 I served as a senior chemical engineer with the same branch, where my duties included the evaluation of steam generator chemistry and corrosion programs at both operating plants and plants in the licensing process.

From 1966 to 1981 I was employed by Combustion Engineering Corporation in a variety of management and engineering positions, the last of which was Manager of Chemistry Development from 1977 to 1981. During this 15-year period, my prime technical responsibility was support to operating nuclear power plants and nuclear plants in construction in the area of chemical and radiochemical sampling, analysis, data interpretation, establishing chemistry specifications and conducting laboratory experiments to verify or support nuclear plant requirements. In this capacity I made frequent visits to nuclear power plants where I physically conducted sample and analysis programs or audited the utilities' capabilities in the chemistry and radiochemistry area. During the last twelve years at Combustion Engineering, approximately fifty percent of my time was expended in areas associated with understanding and resolving steam generator corrosion problems.

From 1958 to 1966 I served in the United States Navy where I was Qualified in submarines for all nuclear duties. For three years of this period I was an instructor, responsible for teaching officer and enlisted personnel in the area of chemistry, corrosion and mechanical systems operations and control. My final duty station in the Navy was on the USS Nautilus, where I was responsible for all chemistry and corrosion control and personnel radiation exposure.

Education

I attended the University of Hartford School of Engineering and completed course work in 1970. I am a Registered Professional Corrosion Engineer.

Paul C. S. Wu  
Chemical Engineering Branch  
Division of Engineering  
Professional Qualifications

FIELD: Corrosion and Water Chemistry

TOTAL EXPERIENCE: 19 years

NUCLEAR: 16 years

KEY RELEVANT EXPERIENCE

- . Principal Engineer, Materials and Corrosion Programs at Westinghouse ARD
- . Supervisor, Mechanical Properties Laboratory
- . Lead Engineer, Advance Nuclear Control Material Development
- . Lead Engineer, Materials and Corrosion Evaluation for Power Generating Equipments
- . Lead Engineer, High Temperature Design Criteria and Method
- . Lead Engineer, Low Friction and High Wear Resistant Materials Development
- . Lead Engineer, Liquid Metal Corrosion and Sodium Technology

RELATED PROFESSIONAL BACKGROUND

Before joining the Metallurgy and Materials Research Branch at NRC, I was employed as a Principal Materials Engineer at the Westinghouse Advanced Reactors Division. I was responsible for many materials and corrosion programs at ARD. From 1976 to 1979, I was in charge of all materials and corrosion programs concerning aqueous corrosion and pertinent to nuclear fuel reprocessing and waste management. I was responsible for proposal preparation, research execution, and program coordination among various Westinghouse divisions and national laboratories. Prior to 1976, I was in charge of the Mechanical Properties Laboratory at ARD, and was responsible for characterizing the creep, fatigue, and stress-rupture of stainless steels and nickel-base alloys for the national program on high temperature design criteria and methods. Before joining Westinghouse, I was a research scientist at the Ames Laboratory of USAEC engaging in sodium technology and nuclear materials research.

EDUCATIONAL BACKGROUND

- B.S. (Metallurgical Engineering, 1964), National Cheng-Kung University, Taiwan
- M.S. (Metallurgical Engineering, 1967), University of Missouri at Rolla, Rolla, MO
- Ph.D. (Materials Science and Inorganic Chemistry, 1972), Iowa State University, Ames, Iowa

MANAGEMENT TRAINING

- . Management Techniques, Westinghouse Learning Corporation
- . Decision Making, Westinghouse Learning Corporation
- . Communication Skills, Westinghouse Learning Corporation
- . Fracture Mechanics, Westinghouse Headquarters Engineering

HONORS AND ACHIEVEMENTS

- . Who's Who in Technology
- . Member of the American Honorary Chemical Society
- . Member of the Review Board of TMS and ASM Publications
- . Member of the NACE Committee on Stress Corrosion Cracking
- . Member of the NACE International Relations Committee
- . Westinghouse Advanced Reactors Division Cost Saving Award (1975)
- . Technical Program Chairman, Pittsburgh Diffraction Conference (1976)

PUBLICATIONS AND PRESENTATIONS

I have published more than 30 technical papers and reports on subjects covering corrosion, materials evaluation and selection, mechanical properties of engineering alloys, sodium technology, friction and wear of materials, nuclear control material development, fuel reprocessing technology, and waste management. In addition, 8 invited presentations at Stanford Research Institute, ANL, ORNL, Sandia Laboratory and other research institutions have also been accredited to me.

Louis Frank  
Division of Engineering  
Office of Nuclear Reactor Regulation  
Professional Qualifications

My name is Louis Frank. I am a Senior Materials Engineer in the Inservice Inspection Section, Materials Engineering Branch, Division of Engineering, Office of Nuclear Reactor Regulation, of the United States Nuclear Regulatory Commission. In my present position, I am responsible for performing technical reviews and evaluations of PWR steam generator tube surveillance and repair programs for NTOL and operating plants.

I hold a Bachelor of Science Degree in Metallurgical Engineering and a Master of Science Degree in Metallurgy from the University of Kentucky and New York University, respectively. I am also a Registered Professional Engineer in the State of Maryland.

I have a total of thirty-two years of professional experience of which thirty-one years have been in the nuclear field. I was employed as a materials research engineer at General Telephone & Telegraph's Atomic Energy Labs in Bayside, N. Y. starting in 1952. From 1955 through 1963 I was a supervisory engineer in nuclear materials research and development at the then Martin Co.'s nuclear division. From 1963 through 1973 I was with two consulting firms engaged in nuclear safety studies.

Since joining the NRC in June 1973 I have been involved in corrosion and steam generator issues. In the Office of Standards, I prepared regulatory guides on steam generator inspection and plugging. In the Office of Research, I managed programs involving eddy-current inspection, particularly developing advanced techniques for conducting eddy-current inspections.

S. Stanley Kirslis  
Professional Qualifications

I am a Chemical Engineer in the Chemical Technology Section of the Chemical Engineering Branch of the Division of Engineering, Office of Nuclear Reactor Regulation. My duties include evaluation of the compliance of PWR and BWR licensees with the Commission's requirements related to the water chemistry and corrosion aspects of nuclear reactors. I have worked in this position since April 1980.

From 1973 to 1980, I was an Environmental Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation. From 1960 to 1973, I designed and carried out in-pile tests related mainly to the materials compatibility aspects of the Molten Salt Reactor Experiment at the Oak Ridge National Laboratory (ORNL). From 1953 to 1960, I worked in the Reactor Chemistry Division and the Chemical Technology Division of ORNL, designing and carrying out in-pile tests related to the chemical and nuclear behavior of uranyl sulfate solutions in water at high temperatures (250°F), including the corrosion aspects. From 1943 to 1953, I worked on the Manhattan Project at Columbia University and at the Oak Ridge Gaseous Diffusion Plant on uranium and fluorine chemistry and on gaseous diffusion theory. From 1942 to 1943, I worked as an analytical chemist at the Alabama Ordnance Works. From 1941 to 1942, I worked in chemical analysis at Lever Bros. Co. in Cambridge, Massachusetts.

Education: B.S., Harvard College, 1941

Ph.D in Physical and Inorganic Chemistry, University of Tennessee, 1953