10/26/81

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
WISCONSIN ELECTRIC POWER COMPANY	)	Docket No. 50-266
	)	50-301
(Point Beach Nuclear Plant, Units 1 & 2)	)	(Repair to Steam Generator Tubes)

NRC STAFF WITNESS LIST AND DOCUMENTS

In its "Memorandum and Order Setting Agenda and Rules for October 29-30 Hearing" dated October 15, 1981, the Licensing Board directed the parties to exchange a witness list and documents that will be relied on at the October 29-30 hearing at least 48 hours prior to the hearing. The information to be included as part of the witness list was indicated at p. 2 of the Board's Order and during the October 20, 1981 on-the-record telephone conference call. Tr. at 184-191. While the Staff does not believe that an evidentiary hearing will be required for the reasons discussed below, the Staff is providing the information to the extent the issues have been identified.

The scope of the October 29-30 hearing has been discussed in Board Orders and during the on-the-record telephone conference calls among the Board and parties. The scope is the four Decade contentions admitted by the Board to the extent they are pertinent to the Licensee's proposed sleeving demonstration program and any issues raised ... the form of show cause motion by Decade based upon the Licensee's responses to the two sets of questions posed to the Licensee by the Board. The date for filing the show cause motion was set for 8:00 a.m. Saturday, October 24, 1981. Tr. at 175. Decade's filings of October 23, 1981 did not show that there are

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any issues other than those specifically raised in the four filed contentions which Decade desires to be heard at the hearing scheduled for October 29-30, 1981. As to the four admitted contentions, Licensee has moved for summary disposition on Contentions 3,4 and 5. In its answer filed this day, the Staff supports the Licensee's motion. As noted therein, once a motion for summary disposition has been made and supported by affidavit, a party opposing the motion may not rely on mere allegations, but instead must demonstrate by affidavit or otherwise that a genuine issue exists as to a material fact. 10 C.F.R. § 2.749(b); Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980). This decision also establishes precedent for the termination of a license amendment proceeding in its entirety on summary disposition. "Decade's Answer to Licensee's Motion for Summary Disposition" dated October 24, 1981 does not demonstrate by affidavit or otherwise that a genuine issue exists as to a material fact.

In sum, the Staff does not believe that an evidentiary hearing is warranted on Licensee's request to conduct the sleeving demonstration program. However, in the event an evidentiary hearing is held, the Staff will provide the following panel:

Timothy G. Colburn
Robert A. Clark
Emmett L. Murphy
Bernard Turovlin
Dr. Tin Mo
Dr. John V. Nehemias

Copies of the professional qualifications of the witnesses are attached.

Contention 3

This contention deals with the potential of the Licensee's heat treatment process causing a weakening of the tube material, leading to a circumferential rupture of the tube. The Staff will testify as to the extent of its review and the basis for its conclusion that while the Licensee's process could cause some weakening of the tube material, there is reasonable assurance against a structural failure of the joint during the interim period of the sleeving demonstration program.

The substance of the facts and opinions to be presented by the panel are contained in Sections 2.2, 2.3, 2.5, 2.6, 3.1, 3.3 and 3.4 of the Staff's Safety Evaluation Report.

Contention 4

This contention deals with the possibility of an unexpectedly corrosive environment arising in the annulus between the tube and sleeve due to secondary water impurities. The Staff will testify as to the extent of its review and the basis for its conclusion that the corrosive environment between the tube and sleeve will be no greater than the normal caustic environment in the secondary and that the sleeve material is more corrosion-resistant than the original tube.

The substance of the facts and opinions to be presented by the panel are contained in sections 2.6 and 3.3 of the Staff's Safety Evaluation Report.

Contention 5

This contention deals with difficulity in interpretation of eddy current test results due to the presence of the sleeve and the probability of incipient failures going undetected, leading to a tube rupture during a

LOCA. The Staff will testify as to the extent of its review and the basis for its conclusion that, while the sleeve joint may make regular eddy current inspections more difficult, there are other, special methods of inspection and any potential tube failure would be identified by leak rates and the reactor shut down before a rupture could occur.

The substance of the facts and opinions to be presented by the panel are contained in Sections 2.4, 2.7 and 3.5 of the Staff's Safety Evaluation Report.

Contention 7

This contention deals with the large number of workers required for the full scale sleeving program and the possibility of deterioration in quality of the work because of the necessity of using untrained workers or "jumpers". In view of the small number of tubes to be sleeved for the demonstration program, the Staff does not believe this contention is relevant to the subject matter of the October 29-30 hearing. It should be noted that the Staff has addressed the Licensee's program for reduction of occupational exposures to meet the ALARA standards in Section 4.0 of the Staff's Safety Evaluation Report and Section 4.1.1 of the Staff's Environmental Impact Appraisal.

In the event the Staff determines to conduct cross-examination of any of the parties, at this time the only documents it has identified it would use in preparation of cross-examination are the documents the Licensee has filed in support of the demonstration program and the Staff's Safety

Evaluation Report and Environmental Impact Appraisal.

Respectfully submitted,

Stuart A. Treby

Stuart A. Treby
Assistant Chief Hearing Counsel

Richard G. Bachmann
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 26th day of October, 1981.

ROBERT A. CLARK

DIVISION OF LICENSING

OFFICE OF NUCLEAR REACTOR REGULATION

U.S. NUCLEAR REGULATORY COMMISSION

PROFESSIONAL QUALIFICATIONS

My name is Robert A. Clark. I am Chief of the Operating Reactors Branch #3, Division of Licensing, United States Nuclear Regulatory Commission (NRC). In this position I am responsible for the overall safety and environmental project management for assigned licensed operating power reactors. This includes review of technical and procedural aspects of proposed amendments to operating licenses.

I hold a Bachelor of Science degree in chemical engineering from the University of New Mexico and have also completed three semesters of graduate study in chemical engineering at the same university. I am a registered professional engineer in the State of New Mexico.

I have had a total of 30 years of professional experience all of which has been in the nuclear field. For 17 years I was employed by the Los Alamos Scientific Laboratory (LASL) as a member of the technical staff. During my employment at LASL, I served in a variety of staff and supervisory engineering positions and in the Laboratory's experimental power reactor division. In this capacity I worked in the design, development and operation of two homogeneous reactors (LAPRE I and II); a sodium-cooled, plutonium-fueled fast reactor (LAMPRE); and the Fast Reactor Core Test Facility.

In 1967 I accepted a position as a nuclear engineer with the regulatory staff of the Atomic Energy Commission (AEC) and participated in the safety reviews of both power and experimental reactors. (Fort St. Vrain, SEFOR, UHTREX, Maine Yankee, Calvert Cliffs, Palisades, and FFTF). In my assignments with the AEC and NRC, I have served as Chief of BWR Branch #3, Gas Cooled Reactors Branch, Special Reactors Branch, Operating Reactor Safeguards Branch and Reactor Safeguards Licensing Branch prior to my appointment to my present position. These assignments covered a wide range of reactor types and the technical review and evaluation associated with project management related to applications for limited work authorizations, construction permits, operating licenses and amendment to such licenses as well as physical security plans for operating nuclear power plants.

I am a member of the American Nuclear Society (ANS) and have worked with the ANS subcommittee developing criteria for liquid metal cooled fast reactors (ANS-54) and for gas cooled reactors (ANS-53).

TIMOTHY G. COLBURN

DIVISION OF LICENSING

OFFICE OF NUCLEAR REACTOR REGULATION

PROFESSIONAL QUALIFICATIONS

My name is Timothy G. Colburn. I am a project manager in Operating Reactors Branch No. 3, Division of Licensing, United States Nuclear Regulatory Commission. In this position I am responsible for the technical reviews, analyses and evaluations of applications for amendments to operating reactor licenses. I have held this position for one year.

I hold a Bachelor of Science degree in Mechanical Engineering from the University of Notre Dame.

I have five years of professional experience in the Navy's Nuclear Power Program. In that capacity I completed a one-year intensive program in nuclear power classroom and prototype training. I also served for four years as a qualified Engineering Officer of the Watch. I have been division officer of all shipboard engineering divisions supervising all phases of shipboard engineering operations and maintenance and have participated in an intensive non-refueling shipyard overhaul of a nuclear submarine.

I have also had two years experience with Potomac Electric Power Company, a non-nuclear utility, working in a staff function as assistant to the Manager of Production Operations.

EMMETT L. MURPHY

DIVISION OF ENGINEERING

OFFICE OF NUCLEAR REACTOR REGULATION

PROFESSIONAL QUALIFICATIONS

My name is Emmett L. Murphy. I am a 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 Aerospace Engineering and a Master of Science Degree in Civil Engineering, both from the University of Maryland.

I have had a total of ten years of professional experience of which eight years has been in the nuclear field. I was employed for almost six years as a structural engineer at the Bettis Atomic Power Laboratory by Westinghouse Corporation. During my employment at Bettis, I was involved in the structural design and analysis of core and core structurals of naval reactors.

Since joining the NRC in July 1979, I have been involved exclusively in the steam generator review area. I have been involved in the safety reviews of most of the steam generators which have experienced significant tube degradation during the past two years, including Point Beach Units 1 and 2 and San Onofre Unit 1.

BERNARD TUROVLIN
PROFESSIONAL ENGINEER - CALIFORNIA #9180 MAY, 1949

I am a Corrosion Engineer in the Chemical Engineering Branch of the Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission. I am responsible for safety review and evaluation of the corrosion of materials used in the construction and operation of nuclear power plants.

I have been associated with nuclear energy development and construction as an engineer or metallurgist since 1942. I have been employed in these capacities by numerous organizations beginning with the Metallurgical Laboratory of the University of Chicago transferring to Los Alamos Laboratory, Brookhaven National Laboratory, Combustion Engineering Inc., General Atomic, General Dynamics/Convair, U. S. Army Nuclear Power Group. I have spent a minimum of 4 years at each location.

I have been responsible for the development of basic fabrication techniques, non-destructive examination, and failure analysis. I have done engineering design and component testing for various components used in the nuclear energy field.

I have more than 15 patents for various components and techniques used in the above field.

I have published more than a dozen papers related to this field.

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PROFESSIONAL QUALIFICATIONS

Radiological Impact Section
Radiological Assessment Branch
Division of Systems Integration

I am an Environmental Scientist in the Radiological Assessment Branch, Division of Systems Integration, Office of Nuclear Reactor Regulation.

My formal education consists of study in Chemistry at Rangoon University, Rangoon, Burma where I received a B.Sc. (Honours) degree in 1960 and at the University of Arkansas where I received an M.S. in Nuclear and Radiochemistry in 1963. I received a Ph D in Nuclear and Radiochemistry from Texas A&M University in 1971.

Before joining the U.S NRC, I worked as an Environmental Health Physicist at the Radioactive Waste Standards Branch, Criteria and Standards Division, Office of Radiation Programs, U.S. Environmental Protection Agency, from October 1979 to April 1981. In this position I provided the Radioactive Waste Standards Branch and the Office of Radiation Programs with primary expertise in the area of environmental health physics with particular emphasis on the technical evaluation of the transport of radionuclides through the environment and application to the development of radiation protection standards and guides. I developed specific information and knowledge bases for modeling the movement of radionuclides through the environment by alternative pathways, including transport through the air, water, soil, and food chains.

From May 1978 to October 1979 I was associated with the Lovelace Biomedical and Environmental Research Institute, LBERI (a U.S. DOE contractor laboratory) as an Associate Scientist/Radiochemist. In this capacity I collaborated in inhalation toxicology research on the metabolism and dosimetry of aerosols of uranium and plutonium oxide nuclear fuel material. This work resulted in two research reports covering the fields of radiochemistry, radiobioassay, aerosol physics and radiobiology. Prior to this assignment I served for three years (February 1975 to May 1978) as the Principal Radiochemistry Operations at LBERI and also collaborated in all the toxicology research with radionuclides at LBERI.

From October 1972 to February 1975 I worked as a Staff Scientist/Radiochemist for the Radioecology Division, Puerto Rico Nuclear Center, PRNC (a U.S. Atomic Energy Commission research facility). In this position I conducted marine radiobiology and radioecology research on plutonium using nuclear debrii associated with the Bikini-Enewetak Nuclear Testing areas. At PRNC I was also involved in environmental monitoring for radioactivity and toxic heavy metals in the coastal atmosphere of Puerto Rico as part of the baseline studies for selection of sites for a nuclear power plant.

After receiving the Ph.D. degree from Texas A&M University in December 1971 I held Postdoctoral Research Fellowships in the Departments of Chemistry and Chemical Oceanography at Texas A&M University and collaborated in researches on Radiation Chemistry, water pollution and marine geochemistry of uranium from January 1972 to June 1972.

I have written and published about 24 technical research papers and reports in professional journals and other publications in the general areas of nuclear and radiochemistry (nuclear fission), environmental health physics (radioactive fallout studies), nuclear geochemistry, marine pollution and radioecology, radiobioassay, inhalation toxically and radiobiology and environmental chemistry of radionuclides.

I have been a member of the American Chemical Society (Nuclear Chemistry and Technology Division) since 1963.

List of Research Publications, Papers and Presentations:

1. "Chemistry of Uranium in Aqueous Environments". (Draft Prepared -September 1980. To be published as an EPA Technical Note).

2. "Chemical and Crystalline Properties of High Temperature Treated Aerosols of U, (U-Pu), (U-Th) Oxides". (To be submitted to the Journal of Aerosol Science. (1980-1981).

3. "Effect of the Chemical Form of Uranium Oxide on the Radiation Dose Distribution in the Rat of Plutonium from Inhaled Mixed Uranium-Plutonium Oxides". Experimental Research Protocol, May 1979. Inhalation Toxicology Research Institute (ITRI), Albuquerque, New Mexico.

4. "Effect of Elemental Composition (U/Pu Ratio) on the Radiation Dose Distribution in the Rat of Inhaled Mixed Actinide Oxide (UO_2-PuO_2) Particles". Experimental Research Protocol, March 1979. ITRI, Albuquerque, New Mexico.

5. "Generation and Characterization of Actinide Oxide Aerosols of Specific Physicochemical Forms", pp.18-23, ITRI Annual Report 1978-1979, LF-69, 1979.

6. "In Vitro Dissolution Behavior of Pure and Mixed U and Pu Oxide Aerosols pp.24-29, ITRI Annual Report 1978-1979, LF-69, 1979.

"Mixed Actinide Oxide Aerosols-Metabolism and Dosimetry Study". Position Paper - Draft, November 1978. ITRI, Albuquerque, New Mexico.

8. Development of Radioanalytical Procedures for Mixed Oxides of Plutonium Americium and Uranium in Biological Specimens". ITRI Annual Report (1975-1976), LF-56, pp.105-107. 1977.

9. "Improved Analytical Procedures for ^{210}Po in Biological Specimens". ITRI Annual Report (1975-1976), LF-56, pp.108-110. 1977.

10. "A Simple Liquid Scintillation Counting Procedure for Americium in Biological Samples". ITRI Annual Report (1974-1976), LF-52 1976.

11. "Comparison of Leaching versus Total Dissolution Procedures for Liquid Scintillation Counting of Fecal Samples for ^{238}Pu". ITRI Annual Report (1974-1976), LF-52, 1976.

12. "Laboratory Experiments on the Transfer of Plutonium from Marine Sediments to Seawater and to Marine Organisms". In: Proceedings of the 4th National Symposium on Radioecology, Corvallis, Oregon, May 11-13, CONF-750503-5 (1975).

13. "Recoil Tritium Reactions with Tert-butyl Chloride". J. Inorg. Nucl. Chem. 37:1822 (1975).

14. "Nondestructive Multielement Instrumental Neutron Activation Analysis of Toxic Metals in the Atmosphere of Southern Puerto Rico". In Toxic Metals in the Atmosphere, PRNC-186: 1-20 (1975).

15. "A Revaluation of the Marine Geochemistry of Uranium". IAEA-SM-158/51: 757-769 (1973).

16. "Uranium Concentrations in Marine Sediments". Geochim. Cosmochim. Acta. 37: 35-51 (1973).

List of Research Publications, Papers and Presentions:

17. "Thermal Neutron Activation Analysis of Airborne Particulate Matter in the South Coastal Area of Puerto Rico". Aquirre Power Project. Environmental Studies 1972 Annual Report PRNC-162: 421-427 (1972).
18. "Uranium Concentrations in Marine Sediments". Ph.D. Dissertation, Texas A&M University, College Station, Texas. December 1971. 167 pages.
19. "Uranium: Further Investigation of Uranium Content of Caribbean Cores p6304-8 and p6304-9". Earth and Plan. Sci. Lett 10: 175-178 (1970).
20. "Significance of Symmetric Fission in Fallout Studies from May 1966 Chinese Nuclear Explosion". Health Phys. 14: 269-270 (1968).
21. "Symmetric Fission of ^{232}Th by 14 MeV Neutrons". J. Inorg. Nucl. Chem. 30: 245-247 (1968).
22. "Fission of ^{233}U by Thermal Neutrons". J. Inorg. Nucl. Chem. 29: 257 (1967).
23. "Yields of Zirconium Isotopes from Spontaneous and 14.7 MeV Neutron Induced Fission of Uranium-238". J. Inorg. Nucl. Chem. 27: 503-508 (1965).
24. "Geochemical Studies on the Stratospheric Fallout: U.S.A.E.C. Report TID-7632: 223-241 (1961).

Presentations at Scientific Meetings:

1. "Assay of Uranium, Plutonium and Americium (Curium) in Biological Sample by Sequential Separation and Liquid Scintillation Counting". Presented at the American Chemical Society National Meeting and Symposium sponsored by the Nuclear Chemistry and Technology Division at Anaheim, California on March 12-17, 1978.
2. "A Fast, Simple and Economical Method of Preparing Counting Sources for Alpha Spectrometric Determination of Plutonium and Americium" at the 21st Bioassay, Environmental and Analytical Conference, San Francisco, California, October 8-9, (1975).
3. "Laboratory Experiments on the Transfer Dynamics of Plutonium from Marine Sediments to Sea Water and to Marine Organisms" at the 4th National Symposium on Radioecology, Corvallis, Oregon, May 11-13, 1975.
4. "Uranium Concentrations in Marine Sediments" at the Annual American Geophysical Union Meeting, Washington, D.C., April 12-14, 1971.

John V. Nehemias
PROFESSIONAL QUALIFICATIONS
Radiological Assessment Branch
Division of System Integration

I am a Senior Health Physicist in the Radiological Assessment Branch, Division of Site Safety and Environmental Analysis, Office of Nuclear Reactor Regulation.

My formal education consists of study in Physics at Rensselaer Polytechnic Institute where I received a B.S. in 1948 and at Columbia University where I received an A.M. in 1949. I received a Ph.D. in Environmental Health (Radiological) from the University of Michigan in 1960.

Before joining AEC/NRC, I served three years at Brookhaven National Laboratory as a health physicist, six years at the University of Michigan as health physicist and assistant director of a radiation effects laboratory, and three years as Director of Radiological Health Surveys for the National Sanitation Foundation. In the latter position, I designed, organized, and directed the environmental survey for the Enrico Fermi nuclear plant.

I joined the AEC in September 1960, as a health physicist in the Office of Health and Safety. My principal duties there related to development of radiation protection standards. With the two exceptions noted below, I have continued with AEC (and NRC) since that time. My principal responsibility was in the development of Standards until September 1974; during most of those years I served as a branch chief-through several name changes and reorganization-most recently as Chief, Occupational Health Standards Branch, March 1972 to September 1974.

Since September 1974, I have served as Senior health physicist in the Radiological Assessment Branch. My principal function is the review of power reactor applications, both at the construction permit and operating license stage, to determine the adequacy of proposed occupational radiation protection programs and the related efforts proposed to assure that occupational radiation exposures will be maintained as low as is reasonably achievable.

From June 1963 to September 1965, I took a leave of absence from AEC and served as principal member of the Occupational Safety and Health Division of the International Labor Office in Geneva, Switzerland. My work was principally in the development of international standards.

In December 1971, I was transferred to the Criteria and Standards Division, EPA, serving as Chief, Criteria and Standards Branch, until my return to AEC in March 1972.

I have published about 40 technical articles in professional journals and other publications in the general areas of low-level counting, environmental monitoring, radiation effects on biological systems, and control of occupational radiation exposures.

I have been a Certified Health Physicist since 1960, and am a Charter member of the Health Physics Society and of the Baltimore-Washington Chapter.