ATTACHMENT 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-266
WISCONSIN ELECTRIC POWER COMPANY	)	50-301
	)	
(Point Beach Nuclear Plant, Units 1 & 2)	)	(Repair to Steam Generator Tube)

AFFIDAVIT OF BERNARD TUROVLIN

I, Bernard Turovlin, being duly sworn, depose and state:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Corrosion Engineer in the Chemical Engineering Branch of the Division of Engineering, Office of Nuclear Reactor Regulation. A copy of my professional qualifications is attached to this affidavit.

2. I am responsible for the review and evaluation of those portions of Wisconsin Electric Power Company's (Licensee) Technical Specification Change Request No. 69, dated July 2, 1981, as modified by Licensee's request for interim modification contained in its letter dated October 12, 1981, for which the Chemical Engineering Branch has primary review responsibility. This responsibility includes the safety review and evaluation of the corrosion of materials used in the construction and operation of nuclear power plants. I have reviewed the entire application because many of the mechanical operations and the fabrication procedures impact upon the corrosion resistance of the materials.

3. I have reviewed the laboratory results submitted in support of the San Onofre sleeving program. I have reviewed the laboratory program and the small amount of data available in support of Licensee's program. I find that the test results supporting the San Onofre program are directly applicable to the Point Beach sleeving program. The minor differences due to the differences in the size are insignificant as far as the corrosion aspects are concerned.

4. I am providing this affidavit in response to "Licensee's Motion for Summary Disposition of Decade Contentions 3-6 as Related to Interim Operation of Unit 1", filed October 8, 1981, and the documents attached thereto, including the Statement of Material Facts and the Affidavit of David K. Porter. I have read the Licensee's Motion, the Statement of Material Facts and the Affidavit of David K. Porter.

5. Based upon my review of Licensee's submittals in support of its proposed demonstration sleeving program, I state the following supplemental facts concerning Contention 3.

The Licensee has not proposed welding in the sleeve-to-tube joining process. Joining the top portion of the sleeve and tube by the thermal method proposed by the Licensee in an area which has been expanded will cause a slight degradation (approximately 10%) of the mechanical properties of the tube and sleeve, but still within the ASME Code of allowable strengths for materials in the reactor coolant pressure boundary. The joining alloy will not lead to significant electrochemical attack on the sleeve or tube since its electrical potential is close to that of the passive Inconel comprising the sleeve and the tube. The corrosion and stress corrosion resistance of the Inconel to primary, secondary and caustic environments is not significantly affected by the heat treatment. Also, the small amount of cold work performed on the Inconel materials in attaching the sleeve to the tube is not great enough to cause a significant increase in the susceptibility of the tube to stress corrosion cracking. I find that there is no plausible corrosion mechanism caused by the heat treatment process that would lead to a circumferential rupture of the tube during normal operation or accident conditions.

6. Based upon my review of the Licensee's submittals in support of its proposed demonstration sleeving program, I state the following supplemental facts concerning Contention 4.

The materials used in the heat treatment joining process will not lead to a more corrosive environment than the strong caustic already present in the tube/tube sheet crevices, should the intergranular attack proceed and

allow secondary water to enter between the sleeve and the tube. It has been shown by laboratory and model boiler tests that the sleeves are more resistant to stress corrosion cracking by this caustic than the tubes, because the material has been thermally treated. Consequently, I do not anticipate that an "unexpectedly corrosive environment" will develop in the crevice between the sleeve and the tube.

Based on the test results at San Onofre, and the similarity of the sleeve joints to those at Point Beach, I find there is reasonable assurance that the sleeving process will not induce accelerated corrosion on the tubes themselves and that sleeving material is more resistant to stress corrosion cracking than the original tubes.

I hereby certify that the above statements are true and correct to the best of my knowledge and belief.

Bernard Torovlin

Subscribed and sworn to before me
this 7th day of October, 1981.

Notary Public

My Commission expires: July 1, 1982

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, Combustic 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.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the captioned matter. In accordance with § 2.713(b), 10 CFR Part 2, the following information is provided:

Name	-	Stuart A. Treby
Address	-	U.S. Nuclear Regulatory Commission Office of the Executive Legal Director Washington, DC 20555
Telephone Number	-	Area Code 301 - 492-8661
Admission	-	Supreme Court of the United States Court of Appeals for the State of New York
Name of Party	-	NRC Staff U.S. Nuclear Regulatory Commission Washington, DC 20555

Stuart A. Treby
Assistant Chief Hearing Counsel
for NRC Staff

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