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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
CAROLINA POWER AND LIGHT COMPANY AND )  
NORTH CAROLINA EASTERN MUNICIPAL )  
POWER AGENCY )  
(Shearon Harris Nuclear Power Plant, )  
Units 1 and 2) )

Docket Nos. 50-400 OL  
50-401 OL

AFFIDAVIT OF ARMANDO S. MASCIANTONIO,  
RICHARD A. KENDALL AND ROBERT C. JONES, JR.  
IN FURTHER RESPONSE TO EDDLEMAN CONTENTION 9A

1. I, Armando S. Masciantonio, being first duly sworn, do depose and state: I am employed by the U.S. Nuclear Regulatory Commission as an Equipment Qualification Engineer in the Equipment Qualification Branch, Division of Engineering, Office of Nuclear Reactor Regulation. I am responsible for the technical reviews, analyses and evaluations of the adequacy of the environmental qualification of equipment whose failure under postulated environmental conditions could adversely affect the performance of safety systems in nuclear power plants. I am the Staff's technical reviewer for the Shearon Harris project. I have personal knowledge of the matters set forth herein. A copy of my professional qualifications is included as Attachment 1.
  
2. I, Richard A. Kendall, being first duly sworn, do depose and state: I am employed by the U.S. Nuclear Regulatory Commission as a Reactor Engineer (Instrumentation) in the Instrumentation and Control

Systems Branch, Division of Systems Integration, Office of Nuclear Reactor Regulation. I am responsible for the technical reviews, analyses, and evaluations of instrumentation and control (I&C) systems important to safety at operating nuclear power plants and plants under construction. Principal areas of review involve evaluation of I&C systems for conformance with the Commission's regulations as a basis for licensing plants under construction, modifications to existing I&C systems at operating reactors, and operating reactor events. I have personal knowledge of the matters set forth herein. A copy of my professional qualifications is included as Attachment 2.

3. I, Robert C. Jones, Jr., being first duly sworn, do depose and state: I am employed by the U.S. Nuclear Regulatory Commission as a Nuclear Engineer in the Reactor Systems Branch, Division of Systems Integration, Office of Nuclear Reactor Regulation. I am responsible for the technical reviews, analyses and evaluation of the plant safety analyses given in Chapter 15 of the FSAR. I have personal knowledge of the matters set forth herein. A copy of my professional qualifications is included as Attachment 3.
4. We give this affidavit in further response to Eddleman Contention 9A, which states:  
The proposed resolution and vendor's modification for ITT-Barton transmitters has not been shown to be adequate. (Ref. IE Information Notices 81-29, 82-52, and 83-72).

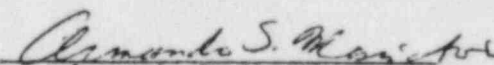
The Staff's testimony on this contention, stated that we had not completed the review of the analysis performed by Westinghouse concerning the defects in Barton transmitters noted in Information Notice 83-72. These defects were thermal non-repeatability of the transmitter and negative shift, and are described in the testimony at pp. 8-10.

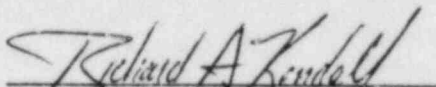
5. Since that time, the Staff has completed its review of the Westinghouse analysis and tests concerning these two defects. The results of this review are set forth below.
6. Corrective actions for the thermal non-repeatability consist of proper recalibration and the installation of an insulating washer between the potentiometer shafts and the mounting bracket. The results of the tests performed on modified units were presented to the Staff at a meeting held on February 23, 1984. These tests established the performance of modified units when subject to normal, abnormal and accident temperatures. The test results presented demonstrate that the reported defect could be eliminated with the installation of the insulating washers. The Staff has reviewed the information provided and has concluded that the proposed resolution and modifications are adequate.
7. A Westinghouse analysis indicates that adequate margin exists for the Shearon Harris plant to accommodate the observed negative shift

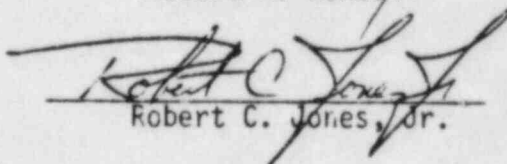
in ITT Barton Transmitters. The results of this Westinghouse analysis were presented to the Staff at a meeting held on November 7, 1984. Based on a review of the information presented, the Staff concludes that the additional error introduced by the negative shift does not cause a safety concern as detailed in the following statements:

In the Westinghouse analysis, the maximum additional error due to the negative shift in the transmitter output was calculated based on actual long term test data. This maximum transmitter error was included in the calculation of the total actuation system channel error allowance using the same methodology previously reviewed and approved by the NRC Staff as part of the V.C. Summer setpoint methodology review (the methodology is proprietary to Westinghouse). The effects of the Westinghouse analysis on the Harris plant error allowances are addressed in a letter from S.R. Zimmerman (CP&L) to H.R. Denton (NRC), dated November 8, 1984. In that letter, CP&L has indicated that, as a result of the Westinghouse analysis, the Safety Analysis Limit for the high pressurizer pressure reactor trip has been increased from 2440 psig to 2445 psig. The Staff has determined that the revised value for the high pressurizer pressure reactor trip will provide adequate protection for the RCS overpressurization events and limit the peak RCS pressure to less than 110 percent of the design value. This is consistent with §§ 15.2.1-15.2.5 of the Standard Review Plan.

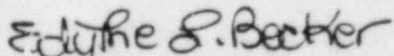
8. Based on a review of the results of the Westinghouse analysis presented to the Staff and information provided by CP&L we find that the proposed resolutions and vendor's modifications for ITT-Barton Transmitters used in the Shearon Harris plant have been shown to be fully adequate to resolve the concerns identified in Eddleman Contention 9A.

  
Armando S. Masciantonio

  
Richard A. Kendall

  
Robert C. Jones, Jr.

Subscribed and sworn to before me this <sup>th</sup> 20 day of November, 1984

  
Notary Public

My commission expires: 7/1/86

## Professional Qualifications

of

Armando S. Masciantonio

I am an Equipment Qualification Engineer in the Environmental Qualification Section of the Equipment Qualification Branch, Division of Engineering, Office of Nuclear Reactor Regulation, United States Nuclear Regulatory Commission. I am responsible for the technical reviews, analyses and evaluations of the adequacy of the environmental qualification of electric equipment important to safety and safety-related mechanical equipment whose failure under postulated environmental conditions could adversely affect the performance of safety systems in nuclear power plants.

Before joining the NRC I was employed as an engineer by Vitro Laboratories Division of Automation Industries, Inc. I was responsible for the environmental and seismic qualification of the safety-related electronic control equipment supplied by Vitro Laboratories Division. Specifically, my duties were to develop and write the environmental and seismic qualification test plans, procedures and reports and oversee the test and procurement activities in support of qualification.

Prior to that, I was employed at the U. S. Naval Surface Weapons Center as a mechanical engineer. My duties involved support of the development, test and evaluation of advanced naval weapons.

I have a B.S. degree in Mechanical Engineering (1972) from Drexel University, Philadelphia, Pennsylvania and a Masters degree in Mechanical Engineering (1976) from the Catholic University of America, Washington, D.C. I also hold a Masters degree in Administrative Science (1980) from the Johns Hopkins University, Baltimore, Maryland.

RICHARD A. KENDALL  
DIVISION OF SYSTEMS INTEGRATION  
U. S. NUCLEAR REGULATORY COMMISSION

PROFESSIONAL QUALIFICATIONS

I have been with the U. S. Nuclear Regulatory Commission since June 1979. I am a Reactor Engineer (Instrumentation) in the Instrumentation and Control Systems Branch (ICSB), Division of Systems Integration, Office of Nuclear Reactor Regulation (NRR). I am responsible for performing technical reviews, analyses and evaluations of the adequacy of instrumentation and control systems important to safety at operating nuclear power plants, and plants under construction. I have been with the ICSB since June of 1980. From May 1979 to June 1980, I worked in the Plant Systems Branch (PSB) in the Division of Operating Reactors, NRR. Prior to employment at NRC, I was employed by the University of Maryland Astronomy Department as an electronic technician with such duties as designing, constructing, and repairing digital systems (and their supporting systems) used to display and record data received from telescope photomultiplier tubes at the university observatory. I am currently a member of the Institute of Electrical and Electronics Engineers (IEEE).

I received a Bachelor of Science degree in Electrical Engineering from the University of Maryland (College Park) in 1979. Previously I had received an Associates degree in Electronic Technology from Montgomery College (Rockville, Maryland) in 1975.

## PERSONAL QUALIFICATIONS OF

ROBERT C. JONES, JR.Education:

E.S., Nuclear Engineering, Pennsylvania State University, 1971. Post Graduate Courses in Physics, Lynchburg College.

Experience:

October 1983 to Present: Nuclear Engineer, Reactor Systems Branch, NRC. Responsible for reviewing safety analyses for PWRs and for coordinating branch reviews of experiments at LOFT, Semiscale and MIST.

February 1983 to October 1983: Manager, Fluid and Transient Analysis Unit, Babcock & Wilcox (B&W). Responsible for performance of large and small break ECCS evaluations and Chapter 15 Safety Analyses.

July 1982 to February 1983: Supervisory Engineer, Operational Analysis Unit, B&W. Responsible for the performance of plant transient analyses and analyses used in the development of operator guidelines.

June 1975 to July 1982: Acting Supervisory Engineer and Supervisory Engineer, ECCS analysis Unit, B&W. Responsible for calculation of large and small break ECCS evaluation, evaluations of mass and energy releases to the containment during a LOCA, and performance of best estimate pretest predictions of LOCA experiments as part of the NRC Standard Problem Program. Involved in the preparation of operation guidelines for small-break LOCA's and inadequate core cooling mitigation.

June 1971 to June 1975: Engineer, ECCS Analysis Unit, B&W. Performed both large and small break ECCS analyses under both the Interim Acceptance Criteria and the present Acceptance Criteria of 10 CFR 50.46 and Appendix K.





Steven Rochi  
Regional Counsel  
FEMA  
1371 Peachtree Street, N.E.  
Atlanta, GA 30309

Atomic Safety and Licensing Appeal  
Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Robert P. Gruber  
Executive Director  
Public Staff - NCUC  
P.O. Box 991  
Raleigh, NC 27602

Wells Eddleman  
718-A Iredell Street  
Durham, NC 27701

Richard E. Jones, Esq.  
Associate General Counsel  
Carolina Power & Light Company  
P.O. Box 1551  
Raleigh, NC 27602

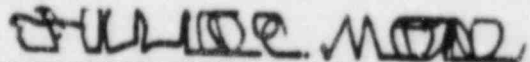
Spence W. Perry, Esq.  
Associate General Counsel  
Office of General Counsel  
FEMA  
500 C Street, SW Rm 840  
Washington, DC 20472

Bradley W. Jones, Esq.  
Regional Counsel, USNPC, Region II  
101 Marietta St., N.W. Suite 2900  
Atlanta, GA 30323

George Trowbridge, Esq.  
Thomas A. Baxter, Esq.  
John H. O'Neill, Jr., Esq.  
Shaw, Pittman, Potts & Trowbridge  
1800 M Street, N.W.  
Washington, DC 20036

Atomic Safety and Licensing Board  
Panel\*  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dr. Harry Foreman, Alternate  
Administrative Judge  
P.O. Box 395 Mayo  
University of Minnesota  
Minneapolis, MN 55455



Janice E. Moore  
Counsel for NRC Staff