UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DUKE POWER COMPANY, et al.	)	Docket Nos. 50-413
	)	50-414
(Catawba Nuclear Station, Units 1 and 2)	)	

AFFIDAVIT OF CHARLES J. WYLIE

Charles J. Wylie, being duly sworn, deposes and states as follows:

(1) My name is Charles J. Wylie and I have been Chief Engineer of the Electrical Division - Design Engineering at Duke Power Company since 1972. I have been employed in the Electrical Division - Design Engineering since August, 1950 in technical, management and supervisory positions, the principal ones of which are as follows:

1956-1957 Senior Engineer -Electrical. I was assigned to the Carolinas-Virginia Nuclear Power Associates to study and recommend most feasible plan under the AEC's third round of nuclear reactor developmental finding. I assisted with the alternate studies which led to the selection and construction of the CVTR-PWR nuclear plant at Parr, South Carolina.

1957-1965 Electrical Engineer. Under the direction of the Assistant to the Chief Engineer, I supervised approximately 50 engineers and designers in the engineering and design of electrical power, control and instrumentation systems for new

generating facilities, additions and associated switching stations.

1965-1972 Principal Engineer - Electrical. I reported directly to the Vice-President of Engineering the Electrical Section of the Design Engineering Department, and was responsible for all engineering, design and equipment of electric power, control and instrumentation systems for new generating facilities, additions and associated switching stations.

(2) As Chief Engineer of the Electrical Division of the Design Engineering Department, I am responsible for all engineering, design and equipment of electric power, control and instrumentation systems for new generating facilities, additions and associated switching stations. In this capacity, I directed the Electrical Division activities for the Oconee Nuclear Stations Units 1, 2 and 3, Belews Creek Coal Fired Station Units 1 and 2, McGuire Nuclear Station Units 1 and 2, Catawba Nuclear Station Units 1 and 2, and major hydro electric generating stations.

(3) I have a Bachelor of Science degree in Electrical Engineering from the University of South Carolina (1950), and have received post graduate training in nuclear engineering, nuclear power plant design, computer technology and application, power system engineering, electric generating station design, switching station design, and management.

(4) I am a Registered Professional Engineer in North Carolina and South Carolina.

(5) I have served on various industry professional committees. I am a "Fellow" of the Institute of Electrical and

Electronics Engineers, member and past chairman of the IEEE Power Generation Committee, and have served on the IEEE Standards Board, the Nuclear Power Engineering Committee, Switchgear Committee and Rotating Machinery Committee. I was chairman of the ANSI/ASME N45 N 551 Working Group on Reactor Coolant Pump Motor Frames and am a member of the American Nuclear Society.

Presently, I am a member of the IEEE Power Generation Committee, the Station Design Subcommittee, and the IEEE Standards Board.

(6) During the Summer of 1976, I served as a member of an U.S. Nuclear Regulatory Commission Workshop on Sabotage Protection for Nuclear Power Plant Design conducted at the Sandia Laboratories, Albuquerque, New Mexico, for the United States Nuclear Regulatory Commission.

(7) In 1977, I was appointed as the U.S. representative to a working group of the International Atomic Energy Agency to write the "Safety Guide on Safety-Related Electrical Power Systems for Nuclear Plants".

(8) The purpose of this affidavit is to describe all of the normal and additional sources of AC power available to support the Catawba Nuclear Station without reliance on the emergency diesel generators. This explanation will describe the high reliability provided by the numerous and diverse means of providing adequate AC power to Catawba.

(9) Grid Reliability. Duke's Transmission System consists of a highly integrated 500/230KV loop network that is part of the Southeastern Electric Reliability Council known as SERC. All the

companies in the region are interconnected such that the combined networks operate as a single integrated system. Catawba Nuclear Station is integrated into the Duke Transmission Network by five 230KV double circuit lines from different locations. Those lines from part of Duke's interconnected system and consequently meet the same reliability criteria as have been established for all the SERC region, which provides that each of the SERC member systems be planned to avoid cascading failures upon the occurrence of the following contingencies:

a) Sudden loss of entire generating capability in any one plant.

b) Sudden loss of a large load or major load center.

c) The outage of the most critical transmission line caused by a 3-phase fault during the outage of any other critical transmission line.

d) Sudden loss of all lines on a common right-of-way.

e) Sudden loss of a substation (limited to a single voltage level within the substation plus transformation from that voltage level), including any generating capacity connected thereto.

f) Delayed clearing of a 3-phase fault at any point on the system due to failure of a breaker to open.

(10) Based on actual data taken over a 5-year period in the mid-70's, the average availability of the 230KV double circuit transmission lines is .99457. Therefore, each of the five 230KV double circuit lines into Catawba has an average availability of .99457. These lines each enter the Catawba switchyard. We have

never experienced a total loss of power to one of our switchyards at a generating station.

(11) The electric system at Catawba is designed to assure high availability of off-site electric power to each of the redundant essential electric buses of each nuclear generating unit. Each essential bus can be supplied electric off-site power over three routes; namely:

a) One independent circuit from the 230KV switchyard arranged to supply electric power normally.

b) A second circuit from the other independent circuit from the 230KV switchyard arranged to supply electric power through a tie breaker.

c) A third circuit from the other unit that can be arranged through the use of a standby transformer.

(12) In summary, the reliability of Duke's Grid System coupled with the design of the Auxiliary Power System will assure a high availability of offsite power to the essential buses.

Charles J. Wylie

Subscribed and sworn to
before me this 11th
day of April, 1984.

Connie P. Nordman
Notary Public

My Commission expires:

My Commission Expires Nov. 16, 1986

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CERTIFICATE OF SERVICE

I hereby certify that copies of "Motion For Authorization To Issue A License To Load Fuel and Conduct Certain Precritical Testing" in the above captioned matter have been served upon the following by deposit in the United States mail this 11th day of April, 1984.

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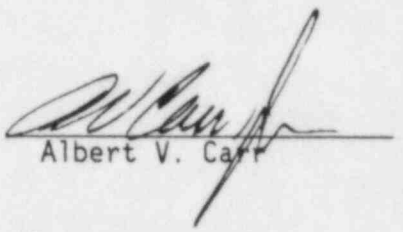

Albert V. Carr

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