UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL 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 WILLIAM F. REINKE

My name is William F. Reinke. I am Manager of System Planning, Duke Power Company. I received a Bachelor of Science degree in Electrical Engineering in 1960 and a Master of Science in Electrical Engineering in 1962 from the University of Wisconsin, and a Master of Management degree in 1974 from the University of North Carolina - Charlotte.

In June 1964, I was employed by Duke Power Company in the System Planning Department as an Assistant Engineer. Following my employment, I progressed through a number of assignments which included long-range planning involving the need for and location of new generation, bulk power transmission planning including interconnections, and subtransmission/regional planning. In 1977, I became Manager of Production and Transmission Planning, System Planning Department, and in August 1984, was named Manager, System Planning Department. In my present capacity, my responsibilities include the planning of all generation, transmission, and distribution facilities necessary to meet the future demand for electricity in the Duke service area.

I am a member of the Institute of Electrical and Electronics Engineers (IEEE), and am a Registered Professional Engineer in both North Carolina and South Carolina. At present, I am Chairman of the Southeastern Electric Reliability Council Technical Advisory Committee (SERC-TAC), a member of the North American Electric Reliability Council Engineering Committee and Disturbance Analysis Working Group.

The purpose of this affidavit is to explain how a delay in the commercial operation of Catawba Unit 1 will affect Duke's system reliability and to respond to certain assertions made in the affidavit of Wells Eddleman, filed in support of Palmetto Alliance and CESG's request for a stay before the Appeal Board.

Duke's system reliability will be reduced by a failure to bring Catawba Unit 1 into commercial operation at the earliest possible time. In 1985, Duke's reserve level without Catawba Unit 1 will be 1632 MW or 13.4%. This assumes an installed capacity of 13,594 MW, firm purchase of 188 MW, and a peak load forecast of 12,150 MW. An acceptable reserve margin must include allowances for loss of the largest system unit, extreme temperature, and reduction of other system capacity due to miscellaneous causes. Further, some consideration must be given to the probability of nuclear refueling during the peak period. Without Catawba Unit 1, the projected reserves of 1632 MW or 13.4% is clearly insufficient to allow for the above contingencies.

Mr. Eddleman's affidavit reaches contrary conclusions. However, his affidavit makes a number of factual errors which lead to error in his conclusions. Mr. Eddleman concludes that it is not necessary for Duke to place Catawba in service in order to maintain system reliability. He asserts

that Duke has "at least a 33% normal weather reserve margin;" that that is substantially greater than the 20% reserve margin he alleges has been "found appropriate" by the North Carolina Utilities Commission; that Duke has the ability to receive "up to 5000 MW from outside sources in an emergency;" the 20% reserve margin supports an installed system capacity of 13,287 MW; that Duke's system capacity without Catawba or 997 MW of standby coal units is 13,782 MW and with such coal units in service is 14,779 MW; that such capacity provides a 5-to-6 year growth rate (assuming a 2.5% per year load growth); and that the Public Staff of the NCUC has concluded that Catawba Unit 1 should be deferred until 1996. (Eddleman Affidavit, ¶ 1, pp. 3-4).

It is not clear what peak figure Mr. Eddleman bases his 33% reserve figure on; Duke's historical peak of record (11,554 MW) was recorded August 23, 1983. Mr. Eddleman probably used the Summer 1984 peak of 11,043 MW in calculating his reserve margins. This is not appropriate. The reserve margins must be calculated based on the forecast peak demand. In addition, Mr. Eddleman's affidavit does not appear to allow for the probability that at least one of Duke's six (including Catawba Unit 1) operating nuclear units will be out of service for refueling during the peak period. Mr. Eddleman includes in his 33% reserve margin 997 MW of coal capacity on Duke's system which has been placed in what he terms "standby reserve." These units are being placed in extended cold shutdown; they are not standby reserve as stated by Mr. Eddleman. These units cannot be returned to full-capacity reliable service without performing extensive maintenance for operational reliability and backfitting to comply with environmental standards. To return these units to reliable full-capacity service would be quite costly and it is unlikely the entire

997 MW would be available in the Summer of 1985. Thus, their inclusion as 997 MW of capacity available to the system in the Summer of 1985 is inappropriate.

I would point out that Duke's current short-range forecast indicates that, assuming Catawba Unit 1 is not in service, the 1985 summer reserve would be 21.6% with those coal units in service and 13.4% without them in service. Catawba Unit 1 represents 1145 MW of capacity; the absence or presence of that unit will cause the Summer 1985 projected reserve to change by 9.4%. Thus it is clear that Catawba is necessary to maintain system reliability.

Mr. Eddleman also alludes to the ability of the Duke system, through its interconnections with neighboring systems, to receive "up to 5000 MW from outside sources in an emergency." This is true so far as it goes; however, Mr. Eddleman assumes such capacity and energy are available, and ignores the substantial doubt that 5000 MW - or any substantial amount of capacity and/or energy - would be available from neighboring systems at the time of Duke's peak loads, since their systems tend to experience peak loads at the same time as Duke.

Mr. Eddleman's assertion that the NCUC has determined a 20% reserve margin appropriate is also misleading. The 20% reserve margin Mr. Eddleman refers to is a minimum reserve margin for long-term planning. Maintaining a 20% minimum margin means, by definition, that the actual reserve margin will be higher most of the time. With respect to the deferral of Catawba Unit 1 until 1996, Mr. Eddleman ignores the fact that the NCUC's Public Staff Report is based on a lower peak demand and higher load management than forecast by Duke. Some of those assumptions have since proved questionable.

For example, it should be pointed out that the peaks predicted by the Public Staff for the Duke system for 1986 excluding load management and for 1992 including load management (and on which the Report's recommendations in part were based) were in fact exceeded in 1983.

Mr. Eddleman (Eddleman Affidavit, ¶ 4, p. 7) argues that the fact that Duke is now attempting to market power to other utilities is an illustration that the capacity and energy represented by Catawba Unit 1 are not needed. The fact is that such capacity and energy are being offered on an off-peak interruptible basis, because Duke needs such capacity and energy during the periods when demand is high on its system.

Finally, I should note that Duke's projected reserve level of 1632 MW, or 13.4%, does not allow for the planned outage of one of Duke's major units, Belews Creek, for critical maintenance work during the peak period of June, July and August, 1985. Without Belews Creek and the commercial operation of Catawba Unit 1 in May 1985, Duke would have projected reserves of 4.2% during the peak summer months of 1985, a level that is clearly inadequate for system reliability. In addition, Duke plans maintenance and refueling of major units during the Spring of 1985. Thus it is clear that, contrary to the assertions in Mr. Eddleman's affidavit, Catawba Unit 1 is needed to maintain system reliability.

I swear that the foregoing is true and accurate to the best of my knowledge this day of 20th of December 1984.

William F. Reinke
William F. Reinke

Sworn to an subscribed before me
this 20th day of December 1984.

JoAnn D. Bowman
Notary Public

My Commission Expires 7-12-88