UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DAIRYLAND POWER COOPERATIVE	)	Docket No. 50-409
	)	(FTOL Proceeding)
(La Crosse Boiling Water Reactor)	)	

AFFIDAVIT OF DARREL A. NASH
REGARDING INTERVENORS' CONTENTION 19

My name is Darrel A. Nash. I am employed by the Nuclear Regulatory Commission in the Utility Finance Branch of the Division of Engineering. I have been employed by NRC/AEC since 1973. My professional qualifications are attached to this affidavit. This affidavit was prepared by me.

The purpose of this affidavit is to address Contention 19 admitted for litigation in this proceeding.

Contention 19 reads as follows:

> CREC contends that the economic cost-benefit balance does not favor issuance of a full-term operating license due to LACBWR's small size, relative obsolescence and retrofitting requirements; its low operating efficiency as evidenced by low megawatt hours of cumulative output, low unit capacity factor, and substantial downtime; the costs of spent fuel storage; the rising costs of fuel and maintenance; and the eventual costs of decommissioning.

In preparation of the Final Environmental Statement, the Staff reevaluated the cost of continued operation of La Crosse and compared this with other reasonable alternatives of providing the power expected to be generated by La Crosse. This is presented in Section 8.1. This section treats and responds to the issues raised in Contention 19.

A brief background on requirements to supply electricity may be helpful. First of all a utility, e.g., DPC must have enough generating capacity to generate the electricity demanded at any time. This is measured in terms of kilowatts. This capacity is usually owned by the utility, however a utility can contract for this capacity by paying the owner a so-called demand charge. Secondly the utility must pay for fuel and other costs to operate plants. These costs depend on the amount of output and are measured in terms of cost per kilowatt hour. The cost of capacity is shown in the first line of Table 8.1-1. Operating costs are in the second and third lines, and other costs follow.

There are a total of 12 situations presented in Table 8.1-1. First of all, two capacity factors are shown: 40 and 50%. The cases investigated are (1) La Crosse granted an FTOL, (2) purchase power and capacity from neighboring utilities, (a) include demand charge, (b) exclude demand charge, (3) purchase capacity from neighboring utilities while using plants on DPC system to replace the power which would come from La Crosse, (a) include demand charge, (b) exclude demand charge, (4) build combustion turbines to provide capacity to meet peak demand but use existing plants to supply most of the energy.

This table shows that La Crosse can be operated at a capacity factor as low as 40% and still is likely to be lower cost than other alternatives. This is shown by the comparison of $71.7 million (column 1) to operate La Crosse and $73.7 million (column 3) if La Crosse is decommissioned and the power is purchased, which is

the closest cost alternative to La Crosse. At any capacity factor higher than 40%, La Crosse becomes more advantageous. See, for example, the $77.7 million cost (column 2) if La Crosse operates at 50% and $88.4 million (column 4) to replace this amount of power by purchase. Building combustion turbines is clearly a less desirable alternative.

Permanent disposal of spent fuel is included in line 2 of the Table. However, if La Crosse is decommissioned soon, there would be an additional cost of storing fuel now in the reactor which has not been fully used. This is shown in line 5.

The decommissioning cost shown is for a 1000 MWe plant. This exceeds the cost of decommissioning La Crosse. The present value cost of decommissioning La Crosse 20 years in the future is less than immediate decommissioning after adjusting for inflation.

Each of the allegations in Contention 19 has been investigated by the Staff and our conclusion regarding each are incorporated into the analysis in the FES Section 8.1.

I reviewed all of the economic facts regarding the La Crosse plant and in my opinion none of the cost factors listed in Contention 19 would outweigh the benefits of its continued operation.

I have read the foregoing affidavit and swear that it is true and accurate to the best of my knowledge and belief.

Darrel A. Nash

Darrel A. Nash

Subscribed and sworn to before me this 21st day of May, 1980

Elizabeth Ann Tipton

Notary Public

My Commission Expires: July 1, 1982.

STATEMENT OF QUALIFICATIONS OF DARREL A. NASH

I am employed as a Section Leader, Utility Section, Utility Finance Branch, Division of Engineering, Office of Nuclear Reactor Regulation, located in Bethesda, Maryland. My educational and professional qualifications are set forth below.

Education

B.S. Agricultural Economics	Colorado State University 1958
M.S. Agricultural Economics	Montana State University 1960
Ph.D. Agricultural Economics	University of Illinois 1964

In addition, I have taken advanced courses in econometrics. My formal educational program has encompassed, and emphasized, studies in micro-economics, mathematics, and statistics as they relate to land and water resources and agricultural production.

Experience

I joined the Regulatory Staff of the Atomic Energy Commission in August 1973, being assigned to the Cost-Benefit Analysis Branch. As a Senior Analyst, I was responsible for reviewing and analyzing environmental reports and preparing cost-benefit portions of environmental statements. I was responsible for developing the criteria for analysis of alternative sites, alternative fuels and alternative cooling systems to be used in

environmental statements. In addition, I conduct generic economic research on topics related to environmental impacts of nuclear power plants.

I have been a Section Leader since 1975, responsible for supervising and conducting the activities above. In April, 1980 as a result of re-organization I was given additional areas of management and supervision. These are need for power and system reliability, financial qualifications of applicants and indemnification under provisions of the Price-Anderson Act.

From April, 1965 to August, 1973, I was with the National Oceanic and Atmospheric Administration in the U. S. Department of Commerce and its predecessor agencies. This position began with responsibility for research and research supervision in fishery marketing, including estimating consumer demand for fishery products and distribution of fishery products. A major project was to conduct a cost-benefit analysis of preservation of fishery products by low level ionizing radiation. Consumer and marketing studies culminated in a study making long-range projections of the demand and supply of fishery products on a worldwide basis.

During the later period of this appointment, my primary responsibility was in fishery management wherein social, economic, and biological studies were conducted to determine needed institutional changes to

better allocate the utilization of fishery resources. Studies were also supervised on the economic conditions of fishing vessel owners and environmental analysis of marine fisheries habitats.

Also, under loan to the U. S. Agency for International Development (AID), I have traveled to eight countries to evaluate potential for producing and distributing fish protein concentrate within these countries.

During 1964 and 1965, I was employed as a resource economist by the Bureau of Land Management in the U. S. Department of Interior and developed models for determining optimum multiple use of public lands for such activities as grazing, watershed management, recreation, and forestry. My duties there emphasized development and analysis of the economic consequences of different land uses.

From 1969 to 1973, I had an appointment as Visiting Assistant Professor in the Agricultural and Resource Economics Department at the University of Maryland and have taught graduate courses in Industrial Organization and Economics of Marketing in that Department.

I have authored or coauthored about 20 publications, more important areas being (1) cost analysis of energy alternatives, (2) optimum land use patterns, (3) cost-benefit analyses of food preservation by low level ionized radiation, (4) long-range projections of demand and supply of fishery products, and (5) demographic patterns of fishery product

purchases. Numerous unpublished papers have also been written on these and related areas such as cost-benefit analysis of public land use and analyses of financial assistance programs for marine fishing vessels.

I am a member of the Society of Government Economists.