UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DAIRYLAND POWER COOPERATIVE (La Crosse Boiling Water Reactor)	)	Docket No. 50-409-SC (Order to Show Cause)

TESTIMONY OF HOWARD A. LEVIN
IN RESPONSE TO BOARD QUESTIONS

Q. Please state your name and business address.

A. My name is Howard A. Levin and my address is the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Q. Would you state your position with the NRC and your professional experience?

A. I am currently Technical Assistant to the Director of the Division of Engineering, Office of Nuclear Reactor Regulation. A statement of my professional experience and qualifications is attached to this testimony.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to respond to question 4 in the Licensing Board's November 12, 1980 Order and question 6 in the Board's November 25, 1980 Order.

Q. Have you read the Board's questions?

A. Yes, I have.

Q. Would you answer the Board's question 4? That question is:

> "In a memorandum from Robert E. Jackson to D. Crutchfield dated June 23, 1980, titled 'Initial Review and Recommendations for Site Specific Spectra at SEP Sites,' the Staff appears to be judging a return period probability of 10^{-3} or 10^{-4} for a safe shutdown earthquake as acceptable. On what basis is a departure from a probability of 10^{-6} or 10^{-7} (accepted by the Staff with respect to other external events), acceptable in this instance? (See, for example, sections 2.2.3 and 3.5.1.6 of the Standard Review Plan; SECY-80-409, Table H-2, September 4, 1980.)"

A. The annual probability of exceeding the recommended safe shutdown earthquake (SSE), as specified for the La Crosse site in a memorandum from R. Jackson to D. Crutchfield, dated June 23, 1980, titled "Initial Review and Recommendations for Site Specific Spectra at SEP Sites", has been characterized on the order of 10^{-3} to 10^{-4}. As discussed in the memorandum, the SSE was selected through consideration of various approaches utilizing both probabilistic and empirical methodologies.

It is appropriate to characterize the seismic risk to the public in terms of expected consequences of future seismic events, such as the chances of exceeding 10 CFR 100 radiation doses. The quantification of seismic risk involves consideration of many factors including the probability

of structural/mechanical failure and radionuclide dispersion as a function of various levels of ground motion. The ground motion or seismic hazard is defined as the expected occurrence of future seismic events. In general, the seismic hazard cannot be equated directly to seismic risk since the hazard is a component of the risk.

The 10^{-6} - 10^{-7} probabilities specified in the Standard Review Plan, sections 2.2.3 and 3.5.1.6 are used as guidelines for the identification of design basis events, such as earthquakes, which must be considered in the design of a plant, because such events may lead to the exceeding of 10 CFR 100 limits. (The differentiation between the 10^{-6} and 10^{-7} guidelines depends on the type of analysis performed.) DBEs with lower probabilities need not be considered. Accordingly, the effects of earthquakes are evaluated since potentially damaging earthquakes are considered to have annual probabilities greater than the 10^{-6} - 10^{-7} guideline.

Acceptance of a certain level of risk is implicit in the 10^{-6} - 10^{-7} guideline. In view of the specification of the La Crosse SSE as having an annual probability of the order of 10^{-3} - 10^{-4}, margins in design would have to be invoked to attain an overall level of risk of 10^{-6} - 10^{-7}. Specific efforts to probabilistically quantify these margins for the La Crosse plant are not planned, although a detailed deterministic evaluation is in progress as part of the Systematic Evaluation Program (SEP). Such an effort is beyond the state-of-design today and is impractical for implementation on an across-the-

board basis in the SEP or some other licensing program. However, the NRC Office of Research is currently conducting a probabilistically based generic program called the Seismic Safety Margins Research Program which is attempting for the first time to rigorously quantify seismic margins. The results of this program have been and will continue to be factored into the SEP and the licensing process.

Q. Would you answer the Board's sixth question? That question is:

> "How long will it take to design a site dewatering system, have it approved by the NRC Staff, and install and make it operational?"

A. I cannot answer how long it will take to design a site dewatering system and then install it and make it operational. These are matters more appropriately addressed by the licensee. I believe that it can be reasonably estimated that it would take about two months for the NRC staff to review a proposed site dewatering system.

HOWARD A. LEVIN
PROFESSIONAL QUALIFICATIONS

My name is Howard A. Levin. I am Technical Assistant to the Director, Division of Engineering, Office of Nuclear Reactor Regulation, NRC. I assist in the development and evaluation of policies and programs related to the technical review of license applications and operating reactor license amendments for nuclear power plants for the protection of the public health and safety and environment. My technical review includes evaluations in the areas of mechanical, equipment qualification, structural, materials, chemical, hydrologic, geotechnical, earthquake and environmental engineering.

I am responsible for making technical recommendations regarding the adequacy of proposed and existing designs, including the safety of continued operation of reactors.

I am responsible for recommending program planning assumptions and systems, attesting to the appropriateness and validity of support analyses, analytical methods, data treatment and affirming the potential for improved management and decision making throughout the division.

I am responsible for administering a division program for the continuing development and evaluation of standard review plans and procedures including the identification and review of areas in which new or revised staff positions are necessary. My duties include the coordination of division technical activities and the preparation of technical reports and correspondence for the division Director.

I am responsible for reviewing, coordinating comments and making recommendations to the Director on the NRC Nuclear Safety Research Program.

I am responsible for monitoring significant events in operating reactors and advising the Director on appropriate action.

I am responsible for reviewing the Division's contractual technical assistance programs to evaluate the effectiveness and utility of the programs and technical effort.

I represent the Director at technical meetings with NRC and industrial representatives. I have provided testimony before the Advisory Committee on Reactor Safeguards, the Atomic Safety Licensing Board, the NRC and public hearings to present and justify technical analysis and evaluations.

I received a Bachelor of Engineering Degree from the Stevens Institute of Technology in 1974 and a Masters of Science Degree from the Massachusetts Institute of Technology in 1976. I have published reports and papers in the areas of structural, mechanical, materials and earthquake engineering. I have presented technical papers and participated in panel discussions at technical society meetings.

I joined the NRC staff in 1976 and have served in positions of progressive responsibility. Prior to my current appointment, I served for two years as program coordinator for the NRC Systematic Evaluation Program seismic review. Preceding my SEP assignment I was heavily involved in the review of operating reactor problems.

From 1974 to 1976 I was employed by Stone and Webster Engineering Corporation. I was responsible for the structural analysis and design of nuclear power plant piping, equipment supports and structures.

From 1970 to 1974 I held positions with Hercules, Inc. and Slattery Associates where I was involved in the construction of process chemical plants, bridges, subways, sewage plants, etc.

I am a member of the American Society of Civil Engineers.

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CERTIFICATE OF SERVICE

I hereby certify that copies of the NRC STAFF'S LETTER TO THE BOARD ENCLOSING TESTIMONY OF LEON REITER AND TESTIMONY OF HOWARD A. LEVIN IN RESPONSE TO BOARD QUESTIONS in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system this 5th day of December, 1980.

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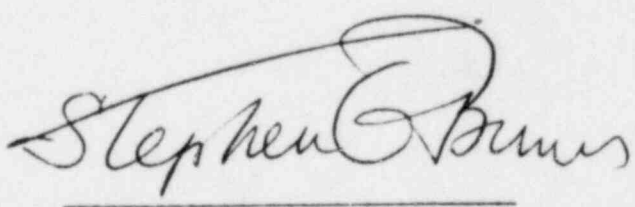

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