

ARGONNE NATIONAL LABORATORY

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PDR 4/27/82

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March 3, 1982

Dr. William Kerr
 Advisory Committee on Reactor Safeguards
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555



Dear Dr. Kerr:

Subject: Comments on the Review of the Clinton Nuclear Power Station

The following comments summarize items of concern which were inspected during the plant tour at the Clinton Nuclear Power Station on Feb. 25, 1982 and discussed with the NRC staff and Illinois Power Company during the ACRS subcommittee meeting on Feb. 25-26, 1982:

1. The scram discharge volume piping had not yet been installed. The NRC staff stated that they had reviewed the design and found it to be acceptable.
2. The remote shutdown panel was not reviewed for human factors considerations by the NRC. The aisle in front of the shutdown panel is approximately 30 inches wide, and some switches are located at approximately knee level. Illinois Power Company stated that they would review the remote shutdown panel from a human factors viewpoint. The controls on the remote shutdown panel interact with only one safety division. The NRC staff states that the RSS design should comply with GDC19 and should provide redundant safety-grade capability to achieve and maintain hot shutdown. The applicant believes that the installed RSS complies with GDC19 and that no design modifications are required. The NRC is pursuing resolution of this item with the applicant.
3. The Clinton Nuclear Power Station is designed to include automatic recirculation pump trip as an Anticipated Transient Without Scram (ATWS) mitigating feature. In addition, an emergency procedure for ATWS is being prepared. A final NRC position on ATWS is required to determine whether the Clinton fixes for ATWS satisfy NRC final requirements.

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The University of Chicago

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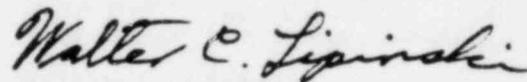
- 7.3 An examination should be made of the adequacy of the present Remote Control Display Console.
- 7.4 An assessment should be undertaken to identify specific incentives generated through the present career structure and training program.

4. The Clinton Nuclear Power Station has been analyzed for a Station Blackout event. The Class IE station batteries are rated for two hours with normal load. IP is writing a Station Blackout emergency procedure which will require reducing the load on the batteries to increase the time for operation at acceptable dc voltage levels. The Station Blackout event is included in NRC's list of unresolved safety issues and NRC has not taken a final position on the resolution of Station Blackout.
5. The ability of the Clinton containment purge valves to close against dynamic load is under review by the NRC.
6. The Clinton Power Station includes the new General Electric solid state protection system. The system has been qualified to meet standard IEEE 323 which calls for a $\pm 10\%$ voltage range about nominal voltage. The Class IE power source consists of a battery charger, battery, and dc-to-ac voltage inverter. Solid state components can be caused to fail if subjected to a momentary "punch through" voltage spike. Voltage spikes typically arise during thunderstorms. IP stated that the Reactor Protection System and video display computer system were not protected by any special voltage spike suppressors nor could IP state whether the charger/battery/inverter system would offer inherent filtering against voltage spike propagation. IP stated that they would respond to the question at the full ACRS meeting scheduled for March 5, 1982.
7. The instrumentation required to detect inadequate core cooling is under review by the BWR owners group. A report is scheduled to be issued in July 1982. The recommendations of the owner's group will be subject to NRC review and it is recommended that the ACRS also review the recommendations.
8. IP described their systems interaction study which included obvious interactions based on geometric configuration but did not include the not-so-obvious interactions such as introduction of water into the plant service air system and the instrument air system because the Clinton plant service and instrument air systems are interconnected.
9. The Clinton Nuclear Power Station includes the advanced Nuclenet control room design with ten video displays on the operator's console. The video display system is not safety grade and if the video displays are not available

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the plant can continue to be operated by utilizing hardwired backup displays. IP used human engineering in designing the display formats by involving the people who will operate the plant in the specification of what the displays should contain. The system is extremely flexible in that if an improvement is desired in a display pattern, a software change can be made to implement the change. Similarly, if in the future IP decides to upgrade the computer hardware, the changes can be accomplished by interchanging hardware modules. The only part of the system that is relatively fixed is the number and location of video displays.

Sincerely,



Walter C. Lipinski
Reactor Analysis & Safety Div.

WCL/at

cc: Dr. Richard P. Savio