



ARKANSAS POWER & LIGHT COMPANY  
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June 2, 1982

1CAN058208

Director of Nuclear Reactor Regulation  
ATTN: Mr. J. F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

SUBJECT: Arkansas Nuclear One - Unit 1  
Docket No. 50-313  
License No. DPR-51  
Request for Exemption to  
Hydrogen Control Final Rule

Gentlemen:

We have on several occasions, please refer to our letters dated December 31, 1981 (0CAN128122), and July 1, 1981 (0CAN078104), directed to NRC's attention our decision and justification for not including reactor vessel head vents into the design at ANO Unit 1. In summary of our correspondence on this subject, we have presented the results of our determination that, due to the configuration of the B&W NSSS, the hot leg and pressurizer vents are adequate to provide any needed venting of noncondensable gases from the reactor coolant system. High point vent operating guidelines have also been submitted for NRC review.

This information was submitted to the NRC as part of the continuing responses to items addressable through NUREG 0737 - "Clarification of TMI Action Plan Requirements." Additionally, we have received a response from Mr. John F. Stolz, dated January 20, 1982, in which he notes receipt of the aforementioned correspondence and requests additional information in order to complete the review which is currently underway on the ANO Unit 1 Reactor Coolant System High Point Vents.

However, through other efforts, on December 2, 1981, the Commission published in the Federal Register (46FR58484) a notice of final rulemaking which required, among other items, that each light-water nuclear power reactor be provided with high point vents for the reactor coolant system and reactor vessel head. Needless to say, this created a

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certain amount of concern and confusion, and has prompted us to restate our position regarding reactor vessel head vents at this opportunity. For your information, we also prepared response to the NRC during the proposed rulemaking efforts on this subject.

The position which favors reactor vessel head vents (as in the above referenced final rule) states they are needed "to provide improved operational capability to maintain adequate core cooling following an accident." Major emphasis has been on the effect of noncondensibles in the Reactor Coolant System on natural/forced circulation capabilities.

ANO Unit 1 is a B&W NSSS which utilizes the OTSG design. High point vents are provided on the "candy cane" of the reactor hot legs. We have assessed the ability of this design to remove gases, including large quantities of noncondensibles, from the primary system following a small break LOCA, and have determined that by starting the reactor coolant pumps (if available) and/or by opening the hot leg vents, gases which may collect in the upper regions of the hot legs can be removed, and forced or natural circulation can be established. There is no need to vent gases which may form within the reactor vessel head as they will not prohibit the establishment of natural or forced circulation. Subsequent plant depressurization to cold shutdown conditions can be performed, even with a gas bubble in the reactor vessel head, without interruptions in natural circulation. We conclude, and are convinced, that reactor vessel head vents are not necessary at ANO Unit 1.

Attention should be focused on the costs and consequences involved in requiring an additional unnecessary penetration. First, since we consider head vents at ANO-1 unnecessary, any installation costs would be wasteful. Personnel exposure in making this modification would be significant. The hazards and consequences of inadvertent opening of these vents are considerable and, in our view, excessive in view of the present capabilities of the system. Finally, any head vent installation would require substantial lead time for design, procurement, installation, documentation and operator training.

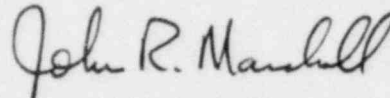
Also, the possibility of leakage of the head vents should be considered. Leakage of reactor coolant onto the control rod drive mechanisms and their sealing gaskets would cause degradation of these components since they are not designed for RCS temperatures. AP&L feels that the risks of degrading the CRDM outweigh any benefits which may be gained from the installation of head vents on ANO-1.

Furthermore, we believe it is reasonable to request that attention continue to be given this subject (reactor vessel head vents) on a case-by-case basis as is presently being done via NUREG 0737 correspondence. Enforcement of the final rule previously discussed will only serve to effectively wipe out the substantial efforts already expended to date, and favor that rule which blankets all licensees without consideration for the different designs and operating procedures involved.

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Therefore, we request exemption from the requirement for installation at ANO Unit 1 of reactor vessel head vents as is presently required by the final notice published December 2, 1981, in the Federal Register. Please provide your response to this request by September 1, 1982.

Very truly yours,

A handwritten signature in dark ink, reading "John R. Marshall". The signature is written in a cursive style with a large, prominent "J" and "M".

John R. Marshall  
Manager, Licensing

JRM:LVP:sc

cc: Mr. Morton R. Fleishman  
Office of Nuclear Regulatory Research  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555