



ARKANSAS POWER & LIGHT COMPANY  
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December 28, 1982

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Director of Nuclear Reactor Regulation  
ATTN: Mr. Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Inadvertant Safety System Actuation  
Due To A Potential PPS Design Problem.

Gentlemen:

This letter is provided in response to Mr. M. Connors verbal request of December 27, 1982, to provide a written summary of our actions to the above subject problem.

On the afternoon of December 23, 1982, we were notified by representatives of Combustion Engineering of an event which took place on December 17, 1982, at San Onofre Nuclear Generating Station Unit 3. The event, as we understand it, occurred during maintenance on channel D of the Plant Protection System (PPS). Initially, four reactor trip breakers opened, for an undetermined reason, followed about five minutes later by simultaneous actuation of all Engineered Safety Features (ESF).

At the time we were notified, C-E believed that the cause of the problem was a specific connector located in channel D. Subsequently, certain power supplies have been suspicioned as contributing to the problem. Both power supply and connector problems are being investigated by C-E and by Southern California Edison but at the present time we understand that no definite root cause for the event has been established.

Our discussions with C-E indicate that the ANO-2 PPS is essentially identical to the San Onofre Units 2&3 design. In order to prevent or mitigate the consequences of such an event at ANO-2, the following short-term measures were taken on December 24, 1982:

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1. The doors at the back of the PPS cabinets were caution tagged to require approval by the Operations Superintendent or the Plant Analysis Superintendent prior to entry. This will ensure that personnel are aware of the need for particular caution while working inside the cabinet.
2. On shift operators are being notified via the ANO-2 Operations Superintendent's Night Orders of the possibility of this event and of the need to take prompt action to identify an inadvertent ESF actuation and to protect safety related equipment from the consequences of such an actuation. These instructions (issued on December 24, 1982) are provided as Attachment 1.

The above mentioned actions were reviewed with Region IV (Mr. J. Callen and Mr. B. Johnson) on December 24, 1982, and it is our understanding that Region IV considers our actions prudent and responsive to the problem, with no restrictions to power operation necessary. Mr. J. Collins confirmed this understanding in our conversation on December 27, 1982, stating that our actions were adequate to address the issue.

In the interim, we will continue to review the situation with C-E and San Onofre to facilitate expedient review of any new issues that arise. We have reviewed our operating procedures to evaluate the need for revisions to deal more explicitly with this problem. Our procedure for Inadvertant Safety Injection Actuation has been revised to ensure more prompt identification and response to an inadvertant Recirculation Actuation Signal (RAS) event.

For the long-term, the following actions are taking place:

1. C-E is evaluating circuits and interfaces within the PPS to identify potential causes of this type of event. This review is expected to be complete by December 31, 1982.
2. C-E plans to recommend design changes to correct problems identified during their review. C-E's review of the connector is expected to be complete (with design change recommendations) by January 31, 1982. We will evaluate their recommendations and prepare Design Change Packages for implementation as appropriate.
3. We are evaluating the feasibility of eliminating automatic initiation of containment recirculation. Manual initiation of recirculation would help to ensure that safety injection actuation and recirculation actuation would not occur simultaneously.

On September 16, 1978, an event occurred at ANO which resulted in de-energizing and re-energizing at least two channels of the PPS. This cause was external to the PPS. The result of the event was initiation of all Engineered Safety Features. Operator intervention satisfactorily prevented equipment damage at that time. Since then, ANO-2 has gone through initial startup and has operated through two fuel cycles without any indication of the type of event which recently occurred at San Onofre Unit-3. Considering the amount of routine and corrective maintenance which

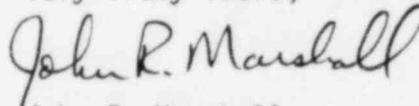
December 29, 1982

has taken place in the PPS in that time, we believe the probability of an event such as the one at San Onofre is extremely unlikely.

The above ANO-2 event was discussed in our Licensee Event Reports 78-4 and 78-5.

We believe this letter addresses the areas requested by Mr. M. Connors (NRR) and Mr. J. Collins (Region IV) in our December 27, 1982, telephone conversation.

Very Truly Yours,



John R. Marshall  
Manager, Licensing

JRM/JTE

cc: Mr. John Collins - Region IV

ATTACHMENT I

TO: All Operators  
FROM: Ray P. Wewers  
SUBJECT: SONGS (San Onofre) PPS - E.S. Actuation Problem

On 12/17/82, San Onofre was doing maintenance testing in PPS channel D. They were taking some power supply measurements with other 3 channels in normal and all back panel doors closed.

They were in mode 5 and doing some testing on CEDMCS when several trip path relays de-energized in the other PPS channels and they received DNBR/LPD: Trips in channel "A" only and also tripped TCB's 1, 2, 5, 6. They assumed the problem to be in the CEDMCS testing so they continued testing in PPS.

When completed, they were closing the door on PPS channel D when all ESF channels actuated. There is a connector on a relay card rack that if it opens or comes loose can cause this occurrence. The connector in channel D is J3109 and we have this same system.

In order to prevent this, operations will place caution cards on each PPS back door stating:

"Do not open without contacting Ray Wewers or Sandy McGregor--until further notice."

Reason: Problem with E.S. Actuation due to J3109 connector.

Also, if this should occur, we must reset RAS Actuation Channels to prevent damaging the E.S. pumps and dumping the RWT into the containment.

Warn I&C Techs when working in the PPS that this is a very serious concern. NRC is preventing San Onofre 2 from restarting pending resolution of this problem.

C-E is looking into a long-term fix.

We will continue to investigate this problem.

RPW:mak