ARKANSAS POWER & LIGHT COMPANY
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June 13, 1989

T. GENE CAMPBELL
Vice President - Nuclear

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U. S. Nuclear Regulatory Commission
Mail Stop: OWFN 13-D-18
Washington, DC 20555

ATTN: Mr. Frederick J. Hebdon, Director
Project Directorate - IV
Division of Reactor Projects -
III, IV, V and Special Projects

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
TS Change Request for CPC Hardware Upgrade

Dear Mr. Hebdon:

Arkansas Power & Light (AP&L) is presently in the process of replacing part of the hardware in the ANO-2 Core Protection Calculator System (CPCS). This effort is scheduled for completion during the upcoming 2R7 refueling outage, presently scheduled to begin in September of this year. A portion of the hardware upgrade includes new fiber optics devices to provide interchannel isolation for the CPC/Core Element Assembly Calculator (CEAC) data links and the CEA position isolation amplifiers. The use of fiber optics equipment for data transmission offers superior isolation capabilities compared to the existing system, which uses conductive wiring and optical isolators to achieve the required channel isolation. Technical Specification 4.3.1.1.4 contains the surveillance requirements for the specific isolation equipment in the existing CPCS hardware. Testing of the new devices in accordance with the existing TS is neither necessary nor practical, as the new equipment uses non-conducting fiber optics cable. The existing TS will no longer be appropriate upon completion of the CPCS upgrade and is therefore proposed to be removed. Similar equipment is in use in the CPCS installed in the Palo Verde plants, which were licensed without a surveillance requirement comparable to ANO-2 TS 4.3.1.1.4.

The CPCS hardware in use at ANO-2 contains electronic computing hardware which is greater than 15 years old. AP&L has concluded that replacement of this equipment with newer, but compatible hardware will greatly enhance the reliability of the CPCS, including maintainability considerations due to greater availability of spare parts for the current generation of equipment. Specifically, the new fiber optics equipment design offers the advantages of standard serial communication link hardware, superior isolation, and improved reliability when compared to the existing equipment.

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In accordance with 10CFR50.91(a)(1), and using the criteria in 10CFR50.92(c), AP&L has determined that this change involves no significant hazards consideration. Our basis for this determination and copies of the proposed change are attached for your review. Although the circumstances of this amendment request are neither exigent or emergency, AP&L requests prompt NRC review and approval to allow time for administrative processing of the change when completed. AP&L requests that the change become effective upon completion of the CPCS hardware upgrade, presently scheduled for completion of the 2R7 refueling outage in November 1989.

Also, in accordance with 10CFR50.91(b)(1), a copy of this amendment request and attachments have been sent to Ms. Greta Dicus, Director, Division of Radiation Control and Emergency Management, Arkansas Department of Health.

Very truly yours,

T. Gene Campbell

TGC

Attachments

cc: Ms. Greta Dicus, Director
Division of Radiation Control
and Emergency Management
Arkansas Department of Health
4815 West Markham Street
Little Rock, AR 72201

STATE OF ARKANSAS)
)
COUNTY OF PULASKI)

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I, T. Gene Campbell, being duly sworn, subscribe to and say that I am Vice President, Nuclear for Arkansas Power & Light Company; that I have full authority to execute this oath; that I have read the document numbered 2CAN068901 and know the contents thereof; and that to the best of my knowledge, information and belief the statements in it are true.

T. Gene Campbell

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the County and State above named, this 13th day of June, 1989.

Sharon Kaye Hendrix

Notary Public

My Commission Expires:

9-19-89

DESCRIPTION OF CHANGE

The proposed TS amendment request involves the deletion of Surveillance Requirement 4.3.1.1.4, which specifies the methodology and acceptance criteria used to verify the isolation characteristics of the Core Element Assembly (CEA) position isolation amplifiers and the optical isolators for the CEA Calculator to Core Protection Calculator (CPC) data links. The existing CPC System is described in detail in Chapter 7 of the ANO-2 Safety Analysis Report (SAR). AP&L is presently involved in an effort to upgrade the CPC System hardware, which includes replacement of the equipment used to achieve the required protection system channel electrical isolation between the various CPC channels and the CEACs. The existing data transmission equipment between CPC/CEAC channels uses conductive wiring and optical isolation devices, whereas the new equipment will provide superior isolation through the use of fiber optics cable, which is electrically non-conducting. Upon completion of the hardware upgrade, the specific requirements of TS 4.3.1.1.4 will no longer be appropriate, due to the new and different hardware; therefore, this specification should be deleted.

BASES FOR PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

In accordance with 10CFR50.92, AP&L has evaluated whether the proposed change involves a significant hazards consideration. AP&L has concluded that the proposed change to delete Surveillance Requirement 4.3.1.1.4 does not involve a significant hazards consideration because operation of Arkansas Nuclear One, Unit-2 in accordance with this change would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change would not alter the probability of any previously analyzed accident occurring. The proposed change simply deletes a surveillance requirement which is no longer applicable for the equipment installed in the plant. This will not impact the accident-initiating events described in Chapter 15 of the ANO-2 SAR. Further, the proposed change will not adversely affect the consequences of accidents which have been previously evaluated. The proposed change simply reflects the upgrading of hardware in a plant protection system, which should increase the system reliability and therefore increase the ability to mitigate the consequences of postulated accidents.

(2) Create the possibility of a new or different kind of accident from any previously evaluated.

The equipment upgrade associated with the proposed change will not change the overall design and protection system function of the CPCS, and the new hardware serves the same purpose as the hardware it replaces; therefore, the proposed change will not create the possibility of a new or different kind of accident. The proposed change simply deletes a surveillance requirement which is no longer appropriate for the specific equipment associated with the CPCS hardware replacement. The new equipment offers superior isolation performance and reliability.

(3) Involve a significant reduction in the margin of safety.

The proposed change is associated with replacement hardware which will improve system reliability, and therefore improve overall safety margins. The CPCS will have at least the same capabilities to mitigate accidents as it had prior to the hardware upgrade, as the system software, and therefore the protection system function, will remain unchanged. The hardware change does not change the overall design basis for any function of the CPCS equipment.

The NRC has provided guidance concerning the application of these standards by providing examples of changes involving no significant hazards considerations. The proposed amendment most closely matches example (ix): "A repair or replacement of a major component or system important to safety, if the following conditions are met: (1) The repair or replacement process involves practices which have been successfully implemented at least once on similar components or systems elsewhere in the nuclear industry or in other industries, and does not involve a significant increase in the probability or consequences of an accident previously evaluated or create the possibility of a new or different kind of accident from any accident previously evaluated; and (2) The repaired or replacement component or system does not result in a significant change in its safety function or a significant reduction in any safety limit (or limiting condition of operation) associated with the component or system." The primary computing equipment used in the ANO-2 CPCS hardware upgrade is upwardly compatible; i.e., the existing software will operate on the new hardware without change in function. This type of hardware upgrade involves practices which are routine, and have been successfully implemented in the computer industry. This replacement process does not involve a significant increase in either probability or consequences of accidents, or create the possibility of new or different kind of accidents, as previously described in the evaluation of the three no significant hazards criteria above. The replacement system will continue to have the same safety function as a portion of a protection system, with no reduction in any associated safety limit or limiting condition of operation. In fact, the new hardware should represent a safety enhancement, due to the increase in reliability associated with the new equipment.

Therefore, based on the evaluation discussed above, AP&L has concluded that the proposed change does not involve a significant hazards consideration.