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June 28, 1996

OCAN069601

U. S. Nuclear Regulatory Commission  
Document Control Desk  
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Washington, DC 20555

Subject: Arkansas Nuclear One - Units 1 and 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6  
Technical Specification Change Request Concerning Open  
Containment Equipment Hatch During Core Alterations

Gentlemen:

Attached for your review and approval are technical specification changes allowing the Arkansas Nuclear One (ANO) Unit 1 and Unit 2 reactor containment building equipment hatch doors to remain open during fuel handling and core alterations. Entergy Operations has determined that approval of this change will save approximately \$800,000 per refueling outage. This results in a savings of over \$21 million for the remaining life of the ANO units, and therefore, is considered to be a cost beneficial licensing action. This change also allows quick and efficient evacuation of containment should a fuel handling accident occur. This prompt containment evacuation results in reduced dose to the workers. This change has been submitted to the NRC by the Nuclear Energy Institute Technical Specification Task Force as a generic change to the Standard Technical Specifications.

The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Entergy Operations requests that the effective date for this change be within 30 days of issuance. Although this request is neither exigent nor emergency, your prompt review is requested prior to the next ANO-1 refueling outage (1R13) which is currently scheduled to begin September 17, 1996.

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Very truly yours,

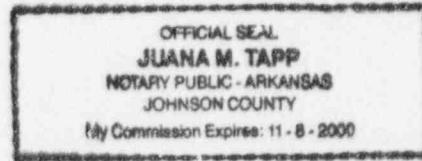
*Jerry W. Yelton*  
JWY/nbm  
Attachments

To the best of my knowledge and belief, the statements contained in this submittal are true.

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for Johnson  
County and the State of Arkansas, this 28 day of June, 1996.

*Juana M. Tapp*  
Notary Public

My Commission Expires 11-8-2000



cc: Mr. Leonard J. Callan  
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ATTACHMENT

TO

0CAN069601

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NOs. DPR-51 and NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNITS ONE & TWO

DOCKET NOs. 50-313 and 50-368

## **DESCRIPTION OF PROPOSED CHANGES**

The proposed changes to the ANO-1 and ANO-2 Technical Specifications include the following:

- Specification 3.8.6 for ANO-1 including associated bases has been revised to allow the reactor building equipment hatch door to remain open during fuel handling.
- Specification 3.9.4.a for ANO-2 including associated bases has also been revised to allow the containment equipment hatch door to remain open during core alterations.

## **BACKGROUND**

ANO-1 and ANO-2 Technical Specifications 3.8.6 and 3.9.4.a, respectively, require the containment equipment hatch door be closed and secured with a minimum of four bolts during core alterations and handling or movement of irradiated fuel within the reactor containment building. The purpose of this requirement is to mitigate the consequences of a fuel handling accident. Entergy Operations has previously submitted (for both of the ANO units) and gained approval of a new fuel handling accident analysis (for ANO-2) which assumes that the containment is open for the duration of the accident. Approval for ANO-1 is pending the NRC's review of additional information submitted by Entergy Operations on June 10, 1996 (1CAN069606). This same approach is now being applied to the containment equipment hatch door.

During shutdown when the decay heat removal or shutdown cooling systems for ANO-1 and ANO-2, respectively, are in use with fuel in the core, site procedures require the containment equipment hatch door have the capability to be closed within the estimated time to steam release should a loss of shutdown cooling or decay heat removal occur. These procedures establish containment closure controls, give guidance to the person responsible for establishing containment closure, provide a checklist of equipment and materials that are required to be maintained available for use in establishing containment closure, and provide a list of protrusions through the equipment hatch along with a description and the name and phone number of the responsible person or organization.

As a routine activity during outages, drills are performed to verify the ability to establish equipment hatch closure. During recent refueling outages, drills have been performed in which closure times for the containment equipment hatch door were approximately five minutes, but in all cases, were less than 15 minutes for each of the ANO units.

With the containment equipment hatch door open during fuel handling and core alterations, equipment, trash, laundry, etc. that cannot safely be removed through the personnel airlock can be easily and efficiently moved in and out of the reactor containment building. This makes it easier to maintain a clean, safe working environment. With the equipment hatch closed during fuel handling and core alterations, trash accumulates in the reactor containment

building. This requires a fire watch to be posted and thus, increases radiation exposure, manpower requirements, and cost.

Also, the need to remove the equipment, trash, laundry, etc. buildup from the reactor containment building is required to be balanced against the need to bring in equipment during the outage. This normally causes equipment removal to delay the final closure of the containment equipment hatch door prior to heatup. If the containment equipment hatch door could be left open during fuel handling and core alterations, this extra time would allow equipment to be removed from the reactor containment building off of critical path and in a more schedule efficient manner.

The impact of having the equipment hatch door closed during fuel movement causes an increase of approximately 1,000 entries per day, on the average, through the personnel hatch. This change in access points increases the transit time for individuals by approximately 30 minutes per round trip entry. If one outage person-hour is worth \$58 (normalized value), then the cost of the equipment hatch door being closed for one day is equal to \$29,870 per day. This equates to \$238,960 for an 8 day fuel handling period.

During a typical refueling outage, work scope and related critical path sequencing is logically related to the availability of the equipment hatch door being open. A review of refueling outage schedules reveal approximately 33 hours of potential critical path savings had the equipment hatch door been allowed to remain open during fuel handling. The cost of critical path time is approximately \$404,000 per day (excluding replacement power cost). Based on the 33 hours, a savings of \$555,500 would be realized per refueling outage should the equipment hatch door be allowed to remain open during fuel handling.

The combination of the savings gained from leaving the equipment hatch door open during the entire refueling outage would be \$238,960 from decreased entries through the personnel hatch and \$555,500 from decreased critical path time. This results in a combined savings of approximately \$794,460 per refueling outage.

### **DISCUSSION OF CHANGE**

This proposed change to technical specifications would allow the containment equipment hatch door to be open during fuel movement and core alterations. The purpose of the current requirement to have the containment equipment hatch door closed during core alterations and fuel movement is to prevent the escape of radioactive material in the event of a fuel handling accident. The current fuel handling accident analyses show that it is not necessary to have containment closure in order to show acceptable site boundary doses following a fuel handling accident. The ANO-1 and the ANO-2 fuel handling accident analyses assumed that the containment equipment hatch doors were open at the time of the accident. In support of a request to allow the containment personnel airlock doors to remain open during core alterations, this analysis was submitted on May 19, 1995 (0CAN059503), as supplemented by letter dated July 21, 1995 (0CAN079509). This request was approved by the Staff on

September 28, 1995 (2CNA099506), as Amendment No. 166 to the ANO-2 Technical Specifications. Additional information was recently submitted on June 10, 1996 (1CAN069606), in order to support the ANO-1 fuel assembly drop analysis. Please note that the attached proposed ANO-1 Technical Specifications incorporate the previous request for allowing the reactor building personnel airlock doors to remain open during fuel handling and are dependent upon approval of the previously requested change.

There are a large number of people in containment during refueling outages including during fuel movement and core alterations. Should a fuel handing accident occur, the containment could be evacuated more expeditiously with the equipment hatch door open than with it closed, thus enhancing personnel safety. This would reduce dose to the workers in the event of an accident while maintaining acceptable 10CFR Part 100 doses to the public. Also, in the event of a fuel handing accident inside containment, the equipment hatch door will be closed following an evacuation of containment.

Due to significant physical plant design differences between ANO and other nuclear units, the ANO units are able to close their containment equipment hatch door easily and efficiently. At both of the ANO units, it has been previously demonstrated that the equipment hatch door can be closed within approximately 15 minutes. Therefore, the justification provided for the previously approved technical specification change for ANO-2 to allow the containment personnel airlock doors to remain open during core alterations would also be applicable to the ANO containment equipment hatch doors.

An individual will be designated to monitor the condition of the open equipment hatch door during core alterations and will assure closure of the equipment hatch door following containment evacuation. The assurance that the open equipment hatch door will remain capable of prompt closure will be administratively controlled in site procedures. Any items passing through the door that could obstruct closure of the door will have either quick disconnect capability or will be readily removable.

#### **DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION**

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

##### **Criterion 1 - Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.**

The proposed change would allow the containment equipment hatch door to remain open during fuel movement and core alterations. This door is normally closed during this time period in order to prevent the escape of radioactive material in the event of a fuel handling accident. This door is not an initiator of any accident. The probability of a fuel handling

accident is unaffected by the position of the containment equipment hatch door. The current fuel handling accident analysis, which has been approved by the Staff for ANO-2 and submitted for ANO-1, calculates maximum offsite doses to be well within the limits of 10CFR Part 100. The current fuel handling accident analysis results in maximum offsite doses of 63.6 and 41.8 Rem to the thyroid and 0.902 and 0.598 Rem to the whole body (sum of beta and gamma) for ANO-1 and ANO-2, respectively. This analysis assumes the entire release from the damaged fuel is allowed to migrate to the site boundary unobstructed. Therefore, allowing the equipment hatch doors to remain open results in no change in consequences. Also, the calculated doses during a fuel handling accident would be considerably larger than the actual doses since the calculation does not incorporate the closing of the equipment hatch door following evacuation of containment. The proposed change would significantly reduce the dose to workers in the containment in the event of a fuel handling accident by expediting the containment evacuation process. Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

**Criterion 2 - Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.**

The proposed change does not involve the addition or modification of any plant equipment. Also, the proposed change would not alter the design, configuration, or method of operation of the plant beyond the standard functional capabilities of the equipment. Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

**Criterion 3 - Does Not Involve a Significant Reduction in the Margin of Safety.**

This proposed change does not have the potential for an increased dose at the site boundary due to a fuel handling accident. The margin of safety as defined by 10CFR Part 100 has not been significantly reduced. Closing the equipment hatch door following an evacuation of containment further reduces the offsite doses in the event of a fuel handling accident and provides additional margin to the calculated offsite doses. Therefore, this change does not involve a significant reduction in the margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, Entergy Operations proposes that the requested change does not involve a significant hazards consideration.