December 4, 2000

Licensee: Entergy Operations, Inc.

Facility: Akansas Nuclear One, Unit 1

SUBJECT: TELECOMMMUNICATION FOR CLARIFICATION OF INFORMATION RELATING TO ANO-1 LRA AND SITE VISIT SUMMARY

On October 31 and November 21, 2000, the staff had conference calls with members of Arkansas Nuclear One, Unit 1 (ANO-1), to obtain clarifying information for the applicant's responses to the staff's request for additional information relating to the Engineering Safety Features, Steam and Power Conversion Systems, Chilled Water System, and Auxiliary Systems. Enclosed is a summary for each of the telecommunications. Each summary contains a list of attendees, a description of each of the staff's concerns, and the specific clarification or additional information being requested by the staff.

A summary of the November 14, 2000, site-visit involving staff members of the Nuclear Regulatory Commission, License Renewal and Standardization Branch and Entergy Operation, Inc., to discuss the Arkansas Nuclear One, Unit 1, license renewal applications safety evaluation review is included, as well.

/***RA***/

Robert J. Prato, Project Manager
License Renewal Project Directorate
Division of Regulatory Improvement Program
Office of Nuclear Reactor Regulation

Docket Nos. 50-313

Enclosures: October 31, 2000 Telecommunications Summary
November 21, 2000 Telecommunications Summary
November 14, 2000 Site-visit Summary

cc w/encls: See next page

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Staff members that contributed to each of these efforts are identified on each of the Telecommunication Summaries.

DOCUMENT NAME:C:\Telecom-3 AUX ESF CWS RAIs.wpd

OFFICE	LA	PM:RLSB	RLSB:BC
NAME	EHylton	RPrato	CIGrimes
DATE	11/ 29/00	11/28/00	12/4/00

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Arkansas Nuclear One
Docket No. 50-313

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October 31, 2000

Attendees:		
	Alan Cox	ANO-1
	Gary Young	ANO-1
	Natalie Mosher	ANO-1
	David Diec	NRC
	Bart Fu	NRC
	Robert Prato	NRC
	Burt Johnson	PNNL
	Kent Faris	PNNL
	Nancy MacGuire Moffit	PNNL

Chilled Water System - The staff requested clarification as to the reference to "Electrical Equipment Rooms" in the LRA. The applicant informed the staff that Electrical Equipment Rooms include the electrical equipment room, the switchgear room, and the battery room. No additional information is required of the applicant.

The staff asked the applicant for the UFSAR drawing number of the chilled water system. The applicant informed the staff that the UFSAR does not have a drawing of the chilled water system, but the LRA, M-221 drawing, is a drawing of the chilled water system. The lack of an UFSAR drawing limits the staff's ability to verify the information in the LRA. Therefore, the correctness of M-221 drawing will need to be verified during the upcoming scoping inspection. No additional information is required of the applicant.

Engineered Safety Features- The staff asked if the applicant had performed AMR of mechanical penetrations. The applicant confirmed that an AMR was performed, and referred the staff to the mechanical penetrations AMR in Section 3.6 of the LRA, Table 3.6-2. No additional information is required of the applicant.

The staff asked the applicant to confirm that the ESF system penetration AMRs considers the internal environments of the associated piping. The applicant confirmed that the AMR was performed, and referred the staff to the AMR of mechanical penetrations for borated water in Table 3.3-7 of the LRA. The applicant also confirmed for the staff that the penetration exterior surfaces are coated with a zinc primer. No additional information is required of the applicant.

The applicant described the Low Pressure Injection pump bearing failure, which was caused by differences in expansion of different materials due to extremely cold cooling water, and not due to aging. No additional information is required of the applicant.

November 21, 2000

Attendees:	Alan Cox	ANO-1
	Gary Young	ANO-1
	Natalie Mosher	ANO-1
	Jim Davis	NRC
	Renee Li	NRC
	Robert Prato	NRC
	Mike Anderson	INEEL

Attached is a list of open items from the ANO-1 license renewal application safety review of the auxiliary systems. On November 21, 2000, the NRC staff participated in a conference call to discuss these concerns. The following is a summary of the discussion and the resolution, if any, to the concerns noted by the staff:

1. The applicant briefly described the cracking of the spent fuel pool liner plate, and described the aging management programs intended to manage cracking during the period of extended operation. On the basis of this discussion, the staff requested that the applicant provide an additional description of the acceptance criteria for the aging management programs currently being used to manage cracking for the staff to consider in its safety evaluation.

2. The applicant informed the staff that the oil analysis program does not involve trending. The sample results are reviewed to determine if impurities exceed normally acceptable levels, but are not trended over time. No additional information is required to satisfy this concern.

3. A list of Fire Protection surveillance activities are provided in the license renewal application and the appropriate standards are readily available for staff review. No additional information is required to satisfy this concern.

4. The applicant described its operating experience relating to the alternate AC diesel generator testing and inspections program activities. The staff requested that the applicant document this experience for the staff to consider in its safety evaluation.

3.3.4.3.4 Open Items

1. The applicant cites spent fuel level monitoring to manage cracking in the liner plate. In response to RAI 3.3.4.3.2.1-3, it is stated that the 3/16-inch thick type 304L liner provides little structural strength and is not safety-related. The applicant further states that stresses on the liner plate would be low in the event of a safe shutdown earthquake and that the liner would not be expected to fail. Also, the applicant describes the purpose(s) of the liner to 1) protect the concrete walls from direct contact with borated water, 2) form a leak barrier with respect to drains, and 3) maintain the leak tightness of the spent fuel pool.

   However, the applicant has experienced cracking in the refueling pool liner, which is in similar contact with the concrete structure; both of these liners are susceptible to cracking from chlorides present in the concrete. The applicant did not list a root cause for the cracking, but stated that it was observed that existing cracks were propagated due to welding in their vicinity. It is unclear whether the existing cracks originated from the inside or outside surface of the refueling pool liner, nor is any industry experience described that is related to cracking caused by external exposure to concrete. Similar cracks may exist in the spent fuel pool liner plate, and could significantly affect the structural strength and leak tightness if a design basis earthquake, or other stress-inducing event occurred. Therefore, the staff suggests the applicant consider a one-time volumetric inspection of susceptible locations on the liner plate to ensure that significant cracking does not exist.

2. The applicant needs to provide the monitoring and trending activities associated with the oil analysis program, as implied by the stated operating experience. In response to RAI 3.3.4.3.2-3(c), the applicant states that oil analysis results have been collected since 1990 for components within the scope of license renewal. The results indicate that lubricating oils are being maintained free of excess water, contamination that would degrade the oil pH level is not occurring, and that proper additives remain present to neutralize any acids that may form during component operation. This historical data indicates that the applicant has maintained the quality of lubricating oils, thereby mitigating aging effects that could compromise the intended functions of applicable components.

3. For the fire suppression water supply system surveillance program, the applicant needs to provide descriptions of the methods and extent of inspection and surveillance activities of components (include operating parameters of the components), and the acceptance criteria (or the CLB) for these tests and inspections.

4. The applicant has not provided any acceptance criteria, nor their bases within the CLB for alternate AC diesel generator testing and inspections program activities. In addition, the applicant does not describe operating experience related to impairment of heat transfer capacity of the heat exchangers. Therefore, the effectiveness of the alternate AC diesel generator testing and inspections program in managing loss of material, maintaining mechanical closure integrity, and monitoring for fouling of heat exchanger tubes is unclear to the staff.

November 14, 2000

Attendees:	Alan Cox	ANO-1
	Gary Young	ANO-1
	Natalie Mosher	ANO-1
	Christopher Grimes	NRC
	Robert Prato	NRC

Subject: SITE VISIT TO REVIEW LRA SAFETY EVALUATION REVIEW

On November 14, 2000, staff members from the Nuclear Regulatory Commission, License Renewal and Standardization Branch, met with members from Entergy Operations, Inc., the applicant for the Arkansas Nuclear One, Unit 1 (ANO-1), license renewal application. The objective of the visit was to review the current status of the license renewal application safety review.

The staff identified and discussed three safety evaluation open items with the applicant. The first open item is requesting a one-time inspection of stagnant areas in the steam and power conversion system piping. The applicant currently uses chemistry control as a means to prevent pitting of system piping. Chemistry control is an effective means of preventing pitting, however, stagnant flow conditions in select locations may prevent proper mixing of chemicals allowing pitting to occur. The staff is requiring the applicant to perform an one-time inspection of stagnant locations in the steam and power conversion system to determine if pitting is occurring. The applicant believes that they have considerable experience inspecting the internals of the steam and power conversion system, including stagnant locations, as part of its normal maintenance activities, and will continue to do so for the life of the plant. Because operating history has not identified any concerns relating to pitting, and maintenance inspections are performed routinely, a special, one-time inspection should not be required. The staff is continuing to evaluate this issue, but currently considers it an open item.

Currently the applicant does not include the booster pump, fire hydrants, the CO_2 system, and portions of the fire suppression system in the Radwaste building within the scope of license renewal because they do not meet General Design Criterion 3, and are not within the scope of components that are required to meet the fire protection requirements as part of the applicant's current licensing basis (CLB). The staff believes that these components should be within the scope of the applicant's CLB, and needs to be added to the scope of license renewal. The NRC staff is currently evaluating the applicant's CLB to make a determination if this concern needs to be addressed under 10 CFR Part 50 or Part 54. If these components are not in the applicant's CLB it will be addressed in accordance with the requirements of 10 CFR Part 50, and will not be an open item in the license renewal safety evaluation report. If they are within the applicant's CLB, then the applicant will be required to add the system and components to the scope of license renewal as required by 10 CFR 54.4(a)(3).

The staff's review of the applicant's license renewal application identified wear of containment hatch hinges, latching mechanisms, and closing mechanisms to maintain containment pressure boundary as an applicable aging effect requiring an aging management review. The applicant believes that the intended function, containment pressure boundary, is attained through movement of the components in question and, therefore, need not require an aging management review in accordance with 10 CFR 54.21(a)(1). In addition, the intended function in question is verified prior to startup each time the door is opened and closed as prescribed by technical specifications. This requirement to verify containment integrity provides the necessary reasonable assurance that the intended function will be maintained consistent with the CLB for the period of extended operation without any aging management. The staff believes that the alignment of the hatch is the concern, and that the alignment does not involve moving parts, or a change in configuration or properties, and therefore requires an AMR in accordance with 10 CFR 54.21(a)(1). The staff is continuing to evaluate this issue, but currently considers it an open item.