

December 13, 1990

50-313 & 50-368

MEMORANDUM FOR: Samuel J. Collins
Division of Reactor Projects
Region IV

THRU: ^{TRQ} Theodore R. Quay, Director
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

FROM: Thomas W. Alexion, Project Manager
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Division of Reactor Projects III, IV, and V
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Sheri Peterson, Project Manager
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Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

SUBJECT: NRR SALP REPORT INPUT, ANO UNITS 1 AND 2, ASSESSMENT PERIOD
OCTOBER 1, 1989, TO NOVEMBER 30, 1990 (TAC NOS. 72501 AND
72502)

Enclosed is the Project Directorate IV-1 input to the Arkansas Nuclear One,
Units 1 and 2, SALP report for the functional areas of Engineering/Technical
Support and Safety Assessment/Quality Verification. The Project Directorate IV-1
evaluation was prepared taking into account the assessment received from
various NRR review branches.

Original Signed By:

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Enclosure: DISTRIBUTION
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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

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Engineering/Technical Support

Analysis

The quality of Engineering and Technical Support was evident in the reviews carried out during the SALP assessment period in support of licensing actions submitted to the staff, in response to NRC Bulletins and Generic Letters, and in support of corrective actions related to operational events and Licensee Event Reports.

Overall, during this period the licensee consistently addressed operability concerns in an aggressive manner and made conservative calls until each concern was resolved. In addition, licensee management kept the NRC completely informed of initial concerns as well as their followup plans for resolution.

Examples include the resolution of the operability issue for the control room emergency ventilation system (both units). The licensee took the initiative to manually isolate the system while testing the safety-related air supply system. Upon determining that the test results were unsatisfactory, the licensee immediately initiated a design change to correct the system deficiencies.

Post modification testing of the ANO-1 high pressure injection (HPI) system in December, 1989, resulted in excessive vibration following installation of cavitating venturis. The licensee immediately decided to remove the venturis, and returned the system to its previous configuration.

In December 1989, following discussions regarding the qualification of taped splices on dual voltage motor-operated valves (MOV's), the licensee decided to delay restart of Unit 1 and reworked the questionable splices which were accessible. Since that time, the licensee reworked all taped splice configurations except for a couple of inaccessible valves which were evaluated for continued operation.

With respect to the resolution of licensing actions and response to generic correspondence, the licensee provided responses which reflected strong technical support and good understanding of significant safety issues. Specifically, Generic Letter 89-06, "SPDS Implementation Verification," required that each licensee certify to the NRC that its SPDS met the requirements of NUREG-0737, Supplement 1 and NUREG-1342. Preliminary staff review indicated that there were approximately 50 differences between the ANO 1&2 SPDS and NUREG-1342, and that a site audit was required to complete the staff's review. The staff's audit determined that the licensee's staff had developed and implemented an SPDS which fully met all requirements of -0737, and was an exemplary system in design and function.

Year Tendon Surveillance Report for Unit 1 also indicated strong technical support. In response to staff concerns regarding grease water content, grease voids, and trend of reduction of tendon forces in tendons tested more than once, the licensee presented a detailed study on these areas of concern to the satisfaction of the staff. Throughout the review, the licensee personnel acted quickly and efficiently in response to the staff's concerns and indicated a clear understanding of the technical issues.

One area which did not reflect adequate resolution of a technical issue of concern was control room habitability. The staff, in 1987, conducted a detailed survey to evaluate the operation of the control room ventilation system (for both units) and its ability to maintain the ANO control rooms habitable. In addition, the survey evaluated the adequacy of the technical specifications and procedures to demonstrate system operability and capability consistent with the licensee's response to Item III.D.3.4 of NUREG-0737. The licensee provided a significantly delayed response on June 4, 1990, which on the surface appeared to be inadequate in addressing the numerous negative findings of the 1987 survey. It appears that insufficient attention and resources were dedicated to this issue. The staff has deferred resolution of this issue for ANO pending the issuance of a future Generic Letter.

Safety Assessment/Quality Verification

Analysis

During the evaluation period a total of 12 license amendments were issued for each unit. In addition to the license amendments, the NRC staff evaluated the licensee's responses regarding numerous other subjects.

One of most significant submittals from the licensee was the combined response to the Diagnostic Evaluation Team (DET) Report and the last SALP Report. In general, this comprehensive response was considered by the staff to be adequate. The licensee responded to each of the specific findings delineated in Section 2 of the DET report and to all findings of the SALP. This product, which included the licensee's Business Plan, was well organized and prioritized and indicated extensive management involvement and attention.

For Unit 1, the application for return to 100% power was an extremely challenging and complex effort on the part of the licensee. It included a significant redesign of the high pressure injection (HPI) system and other related issues such as the net positive suction head for the low pressure injection (LPI) system and reactor building spray (RBS) pumps, the small and large break LOCA analysis for the plant, containment temperature and pressure profiles and the impact on equipment qualification, post-LOCA operator actions, and off-site doses. Overall, the licensee provided a well documented package which was found to be acceptable by six NRC technical review branches. The licensee's technical personnel clearly understood the issues involved and their interrelationships. The licensee's performance on this major task was excellent.

For Unit 1, the applications for the "Cycle 10 Reload" and the "Use of HPI During Cold Shutdown" were clearly written and indicated a good level of technical understanding of the issues associated with a reload analysis and with the loss of decay heat removal. No significant dialogue and no followup submittals were required.

The licensee submitted numerous license amendment applications intended to clarify the technical specifications (TS) for both units. These changes resulted in improvements in the understanding, interpretation and application of the TS areas affected. The amendments included changes to allow both pressurizer code safety valves to be removed in Mode 5 (Unit 2), changes to allow the use of chemicals other than just chlorine to control biological fouling of the service water system (Units 1 and 2), changes to clarify the description of the requirements for maintaining linear heat rate (Unit 2), changes to the allowable minimum setpoint range for the pressurizer and main steam line code safety valves (Unit 2), changes to the boric acid addition tank system piping and valves temperature (Unit 1), changes to the primary-to-secondary system leakage limits (Unit 1), changes to the surveillance requirements for the sprinkler systems (Unit 1), and changes to the seismic monitoring system limiting conditions for operation and surveillance requirements (Unit 1). These changes represent a positive attitude to improving operations and safety at these units.

Generally, the licensee has provided timely responses to NRC generic correspondence and to requests for additional information. However, recent submittals for Unit 1 related to the increase to 100% power, a diesel generator starting air modification, and the use of Inconel 690 for steam generator sleeving and plugging were not provided to the staff with sufficient appropriate lead time. Had any of these submittals included controversial issues, the restart of Unit 1 might have been delayed. Also, as noted in the engineering and technical support section, the response to the control room habitability survey was unnecessarily delayed. In addition, an amendment addressing operability and surveillance of Unit 2 station batteries and a resubmittal of inadequate core cooling TS have been delayed by the licensee.

Two areas which require additional effort to improve the quality and timeliness of submittals are the ISI and IST relief requests. Submittals made during this period required significant discussions between the staff and the licensee for clarification of intention and technical bases for relief (Unit 2). Several relief items had insufficient justification and were not consistent with Code requirements and staff guidance.