



Docket

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 28, 1987

Docket No. 50-313

LICENSEE: Arkansas Power and Light Company (AP&L)
FACILITY: Arkansas Nuclear One, Unit 1 (ANO-1)
SUBJECT: SUMMARY OF AUGUST 21, 1987 MEETING BETWEEN AP&L
AND THE DIRECTOR OF THE OFFICE OF NUCLEAR REACTOR
REGULATION AND THE NRC STAFF REGARDING THE ISSUE OF
HIGH TEMPERATURE IN THE ANO-1 REACTOR CONTAINMENT
BUILDING

INTRODUCTION

At the request of AP&L, a meeting was held on August 21, 1987 at the NRC office in Bethesda, Maryland to appeal the NRC staff's decision to seek an immediate shutdown of ANO-1 until the problem of the reactor building high temperature was resolved. The FSAR stated that 110°F was the design containment temperature during normal operation. Actual temperatures ranged from 103°F to 183°F. This issue was first raised by the senior resident inspector on August 3, 1987. On August 7, 1987, a conference call between Region IV (RIV), NRR, and the licensee was held to discuss this issue. Subsequent to the call a justification for continued operation (JCO) was requested by RIV. This JCO was issued on August 13, 1987. RIV determined that the JCO was inadequate, and with NRR concurrence sent an Augmented Inspection Team (AIT) to ANO on August 17, 1987 to review the licensee's supporting documentation and to determine whether any specific technical safety issues existed, primarily in the equipment qualification area. Along with the onsite inspection effort, questions solicited from the technical review branches at NRR were also given to the licensee. After much discussion between the AIT, AP&L, and the NRC staff, a decision was reached by the staff on August 20, 1987 to seek an immediate shutdown of ANO-1 until all of the concerns pertaining to the containment high temperature were resolved. AP&L was informed of this decision on August 20, 1987 during a conference call. RIV concurred with this decision. Subsequent to that conference call, in the evening of August 20, 1987, AP&L requested a meeting with the Director of NRR to appeal this decision. The request was granted.

SUMMARY

The meeting consisted of two parts. Part one was between the Director of NRR along with the staff and senior AP&L management. The staff pointed out that AP&L did not appear to have done an adequate investigation into the implications of the containment high temperature condition which had existed since plant startup in 1974. There appeared to be too many questions for which AP&L had no ready answer. Therefore, the staff concluded that in the interest of safety and because of the possibility of the existence of technical safety issues, the plant should be placed in a safe condition until all concerns were identified

8709180254 870828
PDR ADDCK 05000313
P PDR

and resolved. AP&L admitted that they had not previously recognized the significance of the containment high temperature, but claimed that since the issue was raised, that they had performed a safety evaluation sufficient to convince themselves that no short term safety issues existed which would necessitate shutdown of the plant. The major areas of technical concern were the (1) effect on the plant safety analyses (2) the impact on EQ equipment and non EQ equipment important to plant operation; and (3) the effect on containment structure including concrete and the post tensioning system. However, at the time of the meeting no specific technical safety problem had been identified either by the AIT or the licensee. The licensee was told that plant operation would be allowed to continue until August 28, 1987 at which time they would have to submit a comprehensive justification for continued operation (JCO) addressing all pertinent issues. Pending staff review of the JCO, a decision would then be made concerning continued plant operation.

Part two of the meeting was between licensee technical personnel and NRC technical reviewers. The purpose of this meeting was to ensure that all of the issues raised by the staff were provided to and understood by the licensee. The licensee's basic program for addressing the temperature issue was also discussed. A copy of the specific questions provided to the licensee by the staff (Enclosure 1) and a list of attendees (Enclosure 2) are enclosed.

151

C. Craig Harbuck, Acting Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:
As stated

cc w/enclosures:
See next page

Docket File	NRC PDR	Local PDR	PD4 Reading
T. Murley/J. Snizek	F. Miraglia	F. Schroeder	D. Crutchfield
P. Noonan	C. Harbuck	OGC-Beth	W. Lanning
E. Jordan	J. Partlow	Receptionist (Phillips)	
NRC Participants	ACRS (10)	GPA/PA	
V. Wilson	B. Kolostyak		

LTR NAME: MEETING SUMMARY FOR ANO1

*See previous concurrences:

PD4/LA*	PD4/APM*	PD4/D*
PNoonan	CHarbuck	JCalvo
8/25/87	8/28/87	8/28/87

and resolved. AP&L admitted that they had not previously recognized the significance of the containment high temperature, but claimed that since the issue was raised, that they had performed a safety evaluation sufficient to convince themselves that no short term safety issues existed which would necessitate shutdown of the plant. The major areas of technical concern were the (1) effect on the plant safety analyses (2) the impact on EQ equipment and non EQ equipment important to plant operation; and (3) the effect on containment structure including concrete and the post tensioning system. However, at the time of the meeting no specific technical safety problem had been identified either by the AIT or the licensee. The licensee was told that plant operation would be allowed to continue until August 28, 1987 at which time they would have to submit a comprehensive justification for continued operation (JCO) addressing all pertinent issues. Pending staff review of the JCO, a decision would then be made concerning continued plant operation.

Part two of the meeting was between licensee technical personnel and NRC staff technical reviewers. The purpose of this meeting was to ensure that all of the issues raised by the staff were provided to and understood by the licensee. The licensee's basic program for addressing the temperature issue was also discussed. A copy of the specific questions provided to the licensee by the staff (Enclosure 1) and a list of attendees (Enclosure 2) are enclosed.

161
C. Craig Harbuck, Acting Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:
As stated

cc w/enclosures:
See next page

Docket File	NRC PDR	Local PDR	PD4 Reading
T. Murley/J. Sniezek	F. Miraglia	F. Schroeder	D. Crutchfield
P. Noonan	C. Harbuck	OGC-Beth	W. Lanning
E. Jordan	J. Partlow	Receptionist (Phillips)	
NRC Participants	ACRS (10)	GPA/PA	
V. Wilson	B. Kolostyak		

LTR NAME: MEETING SUMMARY FOR AN01

PD4/LA *pm*
PNoonan
8/28/87

PD4/APM *CH*
CHarbuck
8/28/87

PD4/D *JHC*
JCalvo
8/28/87

Mr. G. Campbell
Arkansas Power & Light Company

Arkansas Nuclear One, Unit 1

cc:

Mr. J. Ted Enos, Manager
Nuclear Engineering and Licensing
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Mr. James M. Levine, Director
Site Nuclear Operations
Arkansas Nuclear One
P. O. Box 608
Russellville, Arkansas 72801

Mr. Nicholas S. Reynolds
Bishop, Liberman, Cook, Purcell & Reynolds
1200 Seventeenth Street, N.W.
Washington, D.C. 20036

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 220, 7910 Woodmont Avenue
Bethesda, Maryland 20814

Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 2090
Russellville, Arkansas 72801

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
Office of Executive Director
for Operations
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Mr. Frank Wilson, Director
Division of Environmental Health
Protection
Department of Health
Arkansas Department of Health
4815 West Markham Street
Little Rock, Arkansas 72201

Honorable William Abernathy
County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801

AND HIGH CONTAINMENT TEMPERATURE

1. The JCOs submitted to date do not indicate that operability of systems and components exposed to high containment temperatures have been considered in an integrated fashion. Determine what equipment is operable to safely cope with operational transients and accidents. This would include both safety and non-safety related equipment identified in the ATOGs, such as pressurizer level control and indication components, primary coolant high point vents, steam generator level control and indication components, ICS components, parameter monitoring components such as containment radiation, and acoustic monitors.
2. A description of equipment and system components (e.g. cabling, monitors, relays) with respect to specific elevations and the temperatures postulated at the elevations should be provided.
3. A description of the basis for the temperatures assumed to be present at specific elevations.
4. A description of factors included when evaluating the age of components, such as assured temperature, internal heaters, type of lubricant present and selection of most limiting component.
5. A description of temperature monitoring, including recording, to be implemented.
6. A description of information provided to the operations staff concerning this problem and its potential implications.

VENDOR BRANCH QUESTIONS

Has there ever been a significant period of time during the life of the plant in which a portion of the normal reactor building cooling system has been out of service and has resulted in temperatures in the reactor building that are higher than the temperatures observed these past few weeks? If so, have you taken this into account when evaluating the effect upon the aging of environmentally qualified equipment, throughout the reactor building?

Did you identify the EQ components which utilize energized space heaters and include the effect of such heaters in the evaluation of the effect of high temperatures on the calculated qualified life of the EQ components.

ESGB QUESTIONS TO ANO-1 DURING 8/20/87
CONFERENCE CALL (BY JOHN S. MA)

1. Since the temperature inside the ANO-1 containment has been higher than its original design temperature for the past 13 years, the loss of prestress in the containment would be higher than its originally predicted, as a result of the additional creep of concrete and relaxation of prestressing tendon resulting from the additional high temperature. Therefore, the capability of the containment to withstand its design loads needs to be reevaluated.
2. The additional temperature (the temperature over its original design temperature during operation) would put additional compressive stress to the liner which had not been considered in the original design. The additional creep of concrete, as mentioned in question 1, also has shifted additional compressive stress to the liner. Therefore, the integrity of the containment liner needs to be verified.

PERSONS ATTENDING MEETING BETWEEN NRC STAFF
AND ARKANSAS POWER AND LIGHT ON AUGUST 21, 1987 TO DISCUSS
ARKANSAS NUCLEAR ONE UNIT-1 HIGH CONTAINMENT TEMPERATURE PROBLEM

PART 1

NRC

Thomas E. Murley
Dennis M. Crutchfield
Jose A. Calvo
Thomas O. Martin
John W. Craig
C. Craig Harbuck
F. Schroeder

AP&L

John Griffin
T. Gene Campbell
James M. Levine

PART 2

NRC

Jose A. Calvo
John W. Craig
Robert C. Jones
Stephen Alexander
John S. Ma
Warren C. Lyon
C. Craig Harbuck

AP&L

Ted Enos
Dan Howard
Ron Oakley
Richard Barnes
Hank Green
Jim McWilliams
Paul Jones
Charles Turk
Ronnie Howerton
David Baxter
Howard Stevens