

October 15, 1990

Docket No. 50-313

Mr. Neil S. Carns
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, Arkansas 72801

Dear Mr. Carns:

SUBJECT: LICENSE AMENDMENT REQUEST TO INCREASE REACTOR POWER TO 100%
(TAC NO. 74894)

By letter dated August 8, 1990, Entergy Operations requested the subject license amendment for Arkansas Nuclear One, Unit 1 (ANO-1). The NRC staff is currently reviewing your application and has determined that additional information is required to complete our review. Enclosure 1 questions are from our Reactor Systems Branch, Enclosure 2 questions are from our Structural and Geosciences Branch, and Enclosure 3 questions are from our Human Factors Assessment Branch.

As discussed with Dale James, our staff is available to discuss these questions should further clarification be necessary. A prompt response to these questions is requested so that our staff can meet your requested completion date of December 1, 1990.

Sincerely,

ORIGINAL SIGNED BY:

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc w/enclosures:
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OFC	: PD4-1/LA	: PD4-1/PM	: SRXB/BC	: ESGB/BC	: LHFB/BC	: PD4-1/D
NAME	: LBerry	: T. Alexion	: RJones	: GBagchi	: JWermiel	: TQuay
DATE	: 10/19/90	: 10/15/90	: 10/7/90	: 10/9/90	: 10/11/90	: 10/15/90

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Thomas W. Alexion".

Thomas W. Alexion, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:
As stated

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See next page

Entergy Operations, Inc.

Arkansas Nuclear One, Unit 1

cc:

Mr. Early Ewing, General Manager
Technical Support and Assessment
Arkansas Nuclear One
Route 3 Box 137G
Russellville, Arkansas 72801

Mr. Donald C. Hintz
Executive Vice President
and Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286

Mr. Jerry Yelverton
Director Nuclear Operations
Arkansas Nuclear One
Route 3 Box 137G
Russellville, Arkansas 72801

Mr. Gerald Muench
Vice President Operations Support
Entergy Operations, Inc.
P. O. Box 31995
Jackson, Mississippi 39286

Mr. Nicholas S. Reynolds
Bishop, Cook, Purcell & Reynolds
1400 L Street, N.W.
Washington, D.C. 20005-3502

Mr. Robert B. McGehee Esquire
Wise, Carter, Child & Jaraway
P. O. Box 651
Jackson, Mississippi 39205

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
1700 Rockville Pike, Suite 525
Rockville, Maryland 20852

Mr. Tom W. Nickels
Arkansas Nuclear One
Route 3, Box 137G
Russellville, Arkansas 72801

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
1 Nuclear Plant Road
Russellville, Arkansas 72801

Admiral Kinnaid R. McKee, USN (Ret)
Post Office Box 41
Oxford, Maryland 21654

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

Honorable Joe W. Phillips
County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801

Ms. Greta Dicus, Director
Division of Environmental Health
Protection
Arkansas Department of Health
4815 West Markam Street
Little Rock, Arkansas 72201

ENCLOSURE 1

QUESTIONS FROM REACTOR SYSTEMS BRANCH

1. Is cavitation possible in the flow controlling orifices? Could such cavitation alter the expected flows during HPI?
2. Have the valves for the flow control and flow balancing been tested for stability (of setting) during long-term operation?
3. Can a break occur downstream from the flow restricting (regulating) orifices?
4. Will the instrumentation allow the operator to determine, under all circumstances, the maximum flow side so the operator can take the proper corrective action?
5. Has Reference 1 in 86-1179795-01 been reviewed by the NRC?
6. Table 9 (86-1179795-01) does not show pressure vessel water level. Does any core uncovering take place?
7. It is assumed that the proposed system modifications will meet some performance requirements. Will the planned test verify all of the assumed performance requirements? There is no listing of quantified requirements to be verified by the tests.
8. Document 86-1179795-01 is based on the results of References 1-5, however, the assumptions, the methodology, the data or generally the acceptability of these calculations is not discussed.
9. On page 12 (86-1179795-01) the limiting break size is identified as 0.02 to 0.1 square feet. On page 6 (89R-1006-02) a break size of 0.06 to 0.1 square feet is identified. Is there any significant difference in the two?
10. On page 7 (89R-1006-02) an extrapolation is mentioned based on References 5 and 6. Are such extrapolations valid? Have References 5 and 6 been reviewed by the NRC? What are the methods, assumptions and data in these analyses?
11. In 89R-1006-02, there is a large number of AND studies which are relied upon. However, there is no discussion on the methodology, the data or the assumptions of these analyses. Please support their validity.
12. Page 8 (89R-1006-02) reads: "In the reassessment of the maximum post LOCA water level, additional increases in the potential water level were caused by the increase in the BWST level and by the use of more conservative assumptions for the water held-up in the RCS". The statement does not sound correct. Please identify the "conservative assumptions".

ENCLOSURE 2

QUESTIONS FROM STRUCTURAL AND GEOSCIENCES BRANCH

1. Provide information on the borated water storage tank (BWST) layout, materials of construction, major attachments, and foundation structure including the anchor-bolt chairs, anchor-bolt embedment in concrete, supporting substructure media and response spectra (DE and ME used for the analysis).
2. A review of the submitted calculations on seismic reanalysis of the BWST indicate that by the present analysis method, the tank is in the category of flexible tanks. Provide your plans to check the adequacy of the tank accounting for the flexibility of the tank. Some licensees have committed to check the adequacy of such tanks during the resolution of USI A-46, "Seismic Qualification of Equipment in Operating Plants", using the procedures developed by the Seismic Qualification Utility Group (SQUG). This option is available to you.
3. A corrosion allowance of 1/16" is provided in the thickness selection of the shell courses. Provide information on the present thicknesses of the "as is" tank. Are there any areas of the tank where corrosion is ongoing?

ENCLOSURE 3

QUESTIONS FROM HUMAN FACTORS ASSESSMENT BRANCH

1. Report No. 89R-1006-02, page 18, Reference 4, references AND Procedure 1202.01, Rev. 19. Provide a copy of this procedure.
2. Report No. 89R-1006-02, page 18, discusses recommended changes to EOP guidance (Item 3). Provide a draft of changes to the EOPs.
3. Document No. 86-1179795-01, page 16, second paragraph, talks about an initial flow imbalance of 2.5%. Explain where the 2.5% comes from.
4. Page 2 of the cover letter, first paragraph, discusses providing the control room operator with specific flow rate information. Identify the new flow rate information that will be available to the operator. Specifically:
 - a. The physical dimensions of the indication.
 - b. The location of the indication (where in the control room with respect to applicable controls).
 - c. What units are used to provide the indication? Are these units the same as the units in the EOPs? What is the range of the indication, how fine is the range graduated, and is the graduation appropriate for the operator?
5. Discuss what forms of training, including simulator training, will be performed to incorporate the new flow indication information. Will modifications be made to the simulator to incorporate the new indication prior to the commencement of training?