

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-313/84-15
50-368/84-15

License: DPR-51
NPF-6

Dockets: 50-313
50-368

Licensee: Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One (ANO), Units 1 and 2

Inspection At: ANO site, Russellville, Arkansas

Inspection Conducted: May 14-18, 1984

Inspector: *M. E. Murphy* 6/4/84
M. E. Murphy, Reactor Inspector,
Special Projects & Engineering Section Date

Approved: *W. D. Johnson* 6/4/84
for W. D. Johnson, Chief,
Reactor Project Section C Date

Dale A. Powers 6/4/84
R. E. Ireland, Acting Chief,
Special Projects & Engineering Section Date

Inspection Summary

Inspection Conducted May 14-18, 1984 (Report 50-313/84-15)

Areas Inspected: Routine, unannounced inspection of design, design changes and modification. The inspection involved 17 inspector-hours onsite by one NRC inspector.

Results: Within the one area inspected, one violation was identified (failure to provide adequate procedures, paragraph 3).

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DETAILS1. Persons ContactedArkansas Power and Light Company

- *B. Bata, Quality Assurance Engineer
- *T. Cogburn, AP&L Special Projects
- *E. Ewing, Engineering & Technical Support Manager
- *L. Humphrey, Plant Administrative Manager
- *J. McWilliams, Operations Superintendent, Unit 1
- *J. Orlicek, Construction Management
- *E. Sanders, Maintenance Manager
- *L. Schempp, Manager Nuclear Q.C.
- *C. Shively, Plant Engineering Superintendent
- R. Turner, Supervisor, Electrical Plant Engineering
- *R. Wewers, Operations Superintendent, Unit 2

The NRC inspector also contacted other site personnel including clerical and engineering.

*Denotes presence at exit interview conducted May 18, 1984.

2. Status of Previously Identified Items

(Closed) Unresolved Item (50-313/8302-04): This item was left unresolved pending licensee action. NRC Inspection Report 50-313/83-02 identified the lack of a record in the DCP 80-1135 file of the independent calculations performed to size the reversing starters for the replacement motor operated valves CV-3812 and CV-3813. Subsequently, the licensee performed an engineering review of DCP 80-1135 which revealed that an informal calculation was done in the body of DCP that was independently reviewed. However, this independent review was not documented or auditable per ANSI N45.2.11. The licensee also reported in an internal response to this item that:

"Due to the concern expressed in the inspection report, a formal calculation was prepared per ESP #203. The results indicate that the starter contactors alone may not be capable of interrupting the locked rotor current. However, when viewed as a unit (breaker/contacter combination), adequate motor protection is provided by a 20 amp circuit breaker NEMA size 1 starter. The MOV manufacturer assured us that a 20 amp circuit breaker would clear the locked rotor current before damage to the motor would occur. During the review of the DCP and calculation, it was discovered that a 40 amp circuit breaker was actually installed in these valve circuits. This was called to the attention of ANO Engineering via PEAR #83-2534. Plant Engineering subsequently issued DCP #84-1001 to replace the 40 amp with 20 amp circuit breakers."

This is considered an example of lack of procedural requirements to fully implement the requirements of ANSI N45.2.11, and this unresolved item is closed with the opening of an apparent violation (see paragraph 3).

This item is closed.

3. Design, Design Changes, and Modifications

The purpose of this inspection was to verify that design changes and modifications are in conformance with the requirements of the Technical Specifications, industry guides and 10 CFR 50.59.

A total of seven design change packages (DCP) were selected for review, four for Unit 1 and three for Unit 2:

Unit 1

- DCP-83-1001, Delete City Water System Alarms on K-15
- DCP-83-1004, Modification to Station Battery 007
- DCP-83-1032, Station Battery Replacement
- DCP-83-1060, Prevent Decay Heat Isolation Valves from Automatically Closing on a Temporary Loss of Power (CV-1050 & CV-1410)

Unit 2

- DCP-82-2100, Add 16" Check Valve to 42" Personnel Hatch
- DCP-82-2071, P.P.S. Bistable Indicator Logic Card Modification
- DCP-82-2017, Temporary Bypass of HPSI Isolation Valve

These DCPs were reviewed by the NRC inspector to verify:

- a) That the design changes were reviewed and approved in accordance with Technical Specifications and approved licensee procedures.
- b) That they are controlled by established procedures.
- c) That the licensee conducted a review and evaluation of test results and that they were within previously established acceptance criteria or that test deviations were resolved and retesting accomplished as appropriate.
- d) That operating procedures were revised and approved in accordance with Technical Specifications.
- e) That as-built drawings were changed to reflect the modifications.

The following procedures were reviewed to ensure that they provided for the essential DCP requirements and elements:

- "Control of Station Modifications," No. 1000.13, Rev. 8, dated November 10, 1983.
- "Design Control," No. 1032.01, Rev. 6, dated March 8, 1984.
- "Preparation, Review, and Approval of Calculations and Reports," No. 1032.03, Rev. 0, dated February 8, 1982.

The NRC inspector found that Form No. 1000.13D, design change package approval form, provides for the indication of whether or not QC inspection is required for installation. This item was consistently checked "No" for the DCP's reviewed. Further discussion and documentation review disclosed that there is adequate QC inspection performed during the actual installations, but the licensee agreed that the practice presently followed for DCP approval should be reviewed and some change made to show planned QC involvement.

During the DCP review, the NRC inspector could not find the identification of the method of design verification nor was there any evidence of independent reviews of design calculations. A review of the controlling administrative procedures confirmed that these specific elements were not defined nor detailed in the instructions. ANSI N45.2.11, 1974, "Quality Assurance Requirements for the Design of Nuclear Power Plants," requires, in Section 6:

"Measures shall be applied to verify the adequacy of design.",

and,

"The results of design verification efforts shall be clearly documented, with the identification of the verifier clearly indicated thereon, and filed",

as well as,

"The responsible design organization shall identify and document the particular design verification methods to be used."

An example of the consequences of inadequate, cursory or no reviews is detailed in paragraph 2 of this report.

Failure to provide adequate design control measures is an apparent violation of 10 CFR 50, Appendix B, Criterion III. (50-313/8415-01; 50-368/8415-01).

4. Exit Interview

An exit interview was conducted May 18, 1984, with the personnel denoted in paragraph 1 of this report. The NRC resident inspector also attended this meeting. At this meeting the scope of the inspection and the findings were summarized.