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ACCESSION NBR: 8710230268 DOC. DATE: 87/10/19 NOTARIZED: NO DOCKET #
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 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

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 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 871019 ltr re violations noted in Insp Repts
 50-269/87-31, 50-270/87-31 & 50-287/87-31. Violations re
 as-built drawing discrepancies vs as-built conditions &
 inadequate pipe support qualification denied.

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 TITLE: General (50 Dkt)-Insp Rept/Notice of Violation Response

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

October 19, 1987

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Subject: Oconee Nuclear Station
IE Inspection Report
50-269, -270, -287/87-31

Dear Sir:

Please find attached Duke Power Company's response to the violation contained in the subject inspection report. These violations involved as-built drawing discrepancies versus as-built conditions and inadequate pipe support qualification.

Very truly yours,



Hal B. Tucker

WHM/113/sbn

Attachment

xc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

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VIOLATION:

10 CFR, Appendix B, Criterion V as implemented by Duke Power Company, Design Engineering Department QA Manual requires that activities affecting quality shall be accomplished in accordance with instructions, procedures or drawings appropriate to the circumstances. Oconee Design Specification No. OS-0027.00-00-0001, Design Specification for Class A, B, C, D, and F Pipe Supports and Restraints requires the design drawings to be used for the design calculations.

Contrary to the above, Design Calculations for Support No. 3-07A1-0-2400A-R1 used the member properties of a 6-inch beam (W6 X 20) in the computer model and analyses (STRUDL) for Item No. 7, while the actual size of the member was a 4-inch beam, (W4 X 13) as shown on the design drawing and verified in field.

This is a Severity Level V violation (Supplement I).

RESPONSE:**(1) Admission or Denial of the alleged violation:**

This violation is denied.

(2) Basis for Denial:

A discrepancy was noted during the IE Bulletin 79-14 surveillance, in that Item No. 7 was actually a W4 X 13 beam instead of a W6 X 20 beam as shown on the previous design drawing and as modeled in the calculation. The calculation was reviewed and the actual stress in the W6 X 20 was less than 15 percent of its allowable stress. Based on this result and engineering judgement, the W4 X 13 was determined to be adequate without further analysis or modification. The responsible engineer attached an updated drawing to the calculation package to show the corrected beam size but did not update the support calculation to note the acceptability of the beam. Although the responsible Engineer did not adequately document the review, the evaluation of the discrepancy by the engineer was based on appropriate information (field verified Design Drawing), and did not result in an inadequate pipe support qualification. Of the number of calculations reviewed by the inspector, this was the only deficiency found. This deficiency was not due to inadequate review or inadequate implementation of a procedure (Design Specification No. OS-0027.00-0001). The documentation of the review was not as comprehensive or thorough as it could have been thereby resulting in third party calculation file review difficulties. As such the discrepancy identified does not constitute a violation.

VIOLATION:

10 CFR Appendix B, Criterion X, requires that examination, measurements, or test of material or products processed shall be performed for each work operation where necessary to assure quality. Oconee Nuclear Station Specification No. OS-0020.00-00-0002, USNRC I&E Bulletin 79-14 and 79-02 Pipe Configuration and Pipe Support Surveillance Procedure required dimensions, gap sizes, member sizes, weld detail, anchor bolt edge distances, damage and general physical configuration to be verified for conformance to the S/R Design Drawing.

Contrary to the above, five supports of 39 QC accepted pipe supports were found with deviations from the documented requirements.

- (1) Support No. 1-03A-1-0-400A-H38 was found with a lug at the bottom of the pipe which was not shown on drawing.
- (2) Support No. 1-03A-400A-ADM-0200 was found with 1-1/2" and 1-3/4" anchor bolt edge distances existing in field instead of 2-7/8" and 3-1/8" shown on Section A-A of drawing. This exceeded the 1" tolerances specified by the surveillance procedure. A 1/16" gap between the bottom of the pipe attachment and the supporting steel was found in the field but not shown in the drawing.
- (3) Support No. 1-03A-401B-MB-0701 was found with the sway strut bent.
- (4) Support No. 1-14B-4001-LRM-0601 was found with extra welds in the field at the connections between top flange of Item No. 13, TS 3" X 2" X 1/4" and Item No. 12, TS 2" X 2" X 1/4".
- (5) Support No. 3-07A-0-2400A-R1 had a 1/4" gap, not shown in drawing, between the top flange of Item No. 5, W6 X 20, and the vertical member. The bottom flange at the same end was rounded off in field.

This is a Severity Level IV violation (Supplement I).

RESPONSE:**(1) Admission or Denial of the alleged violation:**

This violation is denied.

(2) Basis for Denial:

As specified in our response to IE Bulletin 79-14, dated August 1, 1979, Oconee Nuclear Station initiated a program to verify that seismic piping analysis input information conformed to the actual configuration of seismically analyzed safety related systems. It has been Duke Power's intention, as well as that specified in Bulletin 79-14, to assure that the seismic analyses of safety related piping systems yield conservative results. The IE Bulletin 79-14 program was intended to verify that those elements associated with the piping stress analysis correctly exist in the field. A screening process was established to identify significant deviations in piping and piping support construction which were not consistent with the piping analysis performed on Seismic Category I piping

systems. Duke is accomplishing this as described in the "Pipe Configuration and Pipe Support Surveillance Procedure". Section 3.0 of the procedure specifies that information should be verified, with discrepancies exceeding tolerances reported, for pipe run geometry, clearances, valves, support/restraint (S/R) locations, and S/R design. These parameters are considered to be the critical inputs for the seismic analyses. This procedure is a screening process to identify **significant** deviations in piping and pipe support construction which are not consistent with the piping analysis performed on Seismic Category 1 piping systems.

Visual approximations were used instead of actual measurements for some of the dimensions on supports which were not critical to the ability of the support to function as identified by the piping analysis. Therefore, some minor discrepancies exist between support drawings and actual field conditions. However, these discrepancies do not affect piping analysis and hence, do not violate the intent of the IE Bulletin 79-14 program.

As stated in the notice of violation, 10 CFR 50, Appendix B, Criterion X, requires that examination, measurements, or test of material or products processed shall be performed for each work operation where necessary to assure quality. Specification No. OS-0020.00-00-0002, and in particular Attachments No. 7 and No. 8, has been identified as the procedure which was violated during the inspector's walkdown. The specification states that pipe support/restraints shall be reviewed to verify that they conform to the support drawing with Attachment No. 8 providing basic dimensional tolerances to be used for this purpose. Personnel of varied backgrounds, including technicians and engineers, were trained to conduct the surveillance using this specification. It was recognized that these individuals had to make judgements and the level of detail for this effort was not sufficient to identify all discrepancies. However, the quality of surveillance was considered adequate to identify any significant problems relative to the intent of IE Bulletin 79-14.

In addition, during the Oconee design era, it was customary to specify multiple surface/all around welds regardless of design requirements or practicality of field execution. Unless specific comments were received with the surveillance package, the old weld symbols were left unchanged. Based upon the analysis of discrepancies of this nature identified in the Inservice Inspection Program, it is apparent that the multiple surface/all around welds specified typically exceed design requirements by a large margin.

In addition, the Inservice Inspection Program, which was designed to identify service induced discrepancies, was discussed in detail with J. J. Lenahan of the NRC Region II in regard to IE Bulletin 79-14. This program has documented a number of discrepancies, similar to the minor discrepancies identified in the Violation, between the as-built support drawings and the existing supports. These discrepancies were evaluated as a group for possible generic problems concerning pipe supports not constructed in accordance with IE Bulletin 79-14 as-built drawings. The evaluations, which were performed in accordance with the original design criteria, disclosed that the stresses acting on the pipe supports were within code allowable limits. This program has continued through subsequent inspections on the other units and to date, none of the discrepancies found within the IE Bulletin 79-14 surveillance scope were safety significant.

Even though steps are being taken to correct the discrepancies noted in the alleged violation, all of these supports with discrepancies have been reviewed and found to be operable in their existing condition. Therefore, since the aim of the bulletin program was to identify significant deviations in piping and pipe supports relative to the piping stress analysis, and none of the discrepancies found as a result of the Inservice Inspection Program or those identified in this Violation which were within the bulletin surveillance scope have been safety significant, the discrepancies identified in the referenced inspection report do not constitute a violation.