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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

March 14, 1983

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Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Re: RII:JPO
McGuire Nuclear Station
Docket Nos. 50-369 and 50-370
IE Bulletin 79-14, Revision 1, Supplement 2
IE Bulletin 79-02, Revision 2

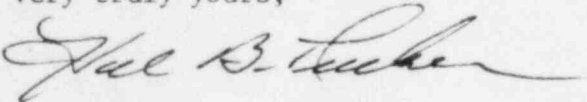
Dear Mr. O'Reilly:

Attached is Revision 3 of Duke Power Company's response to IE Bulletin 79-14, Revision 1, Supplement 2. This completes all known outstanding items associated with IE Bulletin 79-14.

Additionally, Duke Power Company submitted Revision 5 of its response to IE Bulletin 79-02, Revision 2 on May 21, 1982. This revision documented the extent and manner in which Duke Power Company intended to satisfy all actions required by the referenced bulletin. All procedures necessary to ensure that the documented items were completed as stated were in place at that time. As of February 25, 1983, all seismic Category I pipe supports necessary for piping systems required for initial fuel loading were complete. Of the remaining Category I piping systems, seventeen (17) pipe supports containing expansion anchor bolts remain to be inspected. These remaining pipe supports will be inspected in accordance with all applicable existing procedures prior to unit heat-up (Mode 4). This completes all known outstanding items associated with IE Bulletin 79-02.

Should you have any questions regarding this information, please advise.

Very truly yours,



Hal B. Tucker

PBN:jfw
Attachment

cc: Director
Division of Reactor Operations Inspection
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. W. P. Ang
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James P. O'Reilly
March 14, 1983
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cc: (Continued)
Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. W. T. Orders
Senior Resident Inspector
McGuire Nuclear Station

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

RESPONSE TO USNRC I & E BULLETIN 79-14

IEB REFERENCE: IEB 79-14
REVISION 1
SUPPLEMENT 2

RESPONSE REFERENCE: ORIGINAL ISSUE - 11/01/79
REVISION 1 - 01/27/81
REVISION 2 - 08/05/82
REVISION 3 - 03/14/83

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

RESPONSE TO IE BULLETIN 79-14, REVISION 1, SUPPLEMENT 2

PART I - GENERAL DISCUSSION

Described herein is the program for McGuire Nuclear Station which Duke Power Company has developed to provide assurance that design documents which provide input to seismic analyses for safety-related piping systems reflect the as-built condition of these systems. This response describes those elements which are important in verifying the conformance between design documents and the as-built condition as well as details of the inspection program utilized to assure conformance.

The following inspection elements are important:

1. Pipe run geometry.
2. Pipe support and restraint design, including pipe support type, location, function, and clearance for seismic pipe supports.
3. Pipe support attachment to embedment.
4. Pipe attachments.
5. Valve and valve operator identification, location, orientation, center of gravity, and weight.
6. Orifice flanges and other line flanges.

These inspection elements were covered under an on-going, integral part of the construction program for McGuire. A final review of drawings for equipment, pipe layout, and pipe support location is performed for safety-related systems to assure that engineering and design incorporate the as-built drawing information.

Nonconformances between design documents and the as-built configuration are considered in this review, and piping system seismic analyses are revised where appropriate. Detailed description of this program is provided in PART II.

Much of this program was applied during the normal course of McGuire 1 erection; however, portions of our inspection program have occurred more than 12 months prior to issue of IE Bulletin 79-14 on Unit 1. Our review of the inspection methods and practices described in PART II confirms that all elements of our inspection program completed previously remain valid. We are continuing, therefore, with the program underway and described herein to complete inspection of safety-related systems and simultaneously satisfy the requirements to IE Bulletin 79-14.

The quantity of design and inspection documents which make up the as-built verification is very large. Therefore, it is impractical to list them all in this response. The necessary documents are listed and on file with other McGuire records, grouped by mechanical system.

PART II - INSPECTION PROGRAM

Duke Power Company has reviewed inspection methods and practices which have been used and are in continuing use in the construction of McGuire Units 1 and 2. These inspections are satisfactory, both in present and past use, and provide a high degree of assurance that any deviations from design documents will be identified. All identified deviations are either corrected or an evaluation is performed by the appropriate engineering group to provide the basis for accepting the deviation and revising the design document. Details of the inspection program are summarized below:

1. Unit 1 pipe run geometry and configuration inspections were performed in accordance with QA Procedure M-8. This inspection included verifying the general configuration and that there were no abnormal dips, bends, or distortions. Pipe run geometry is determined through visual estimation of dimensions with an accuracy of ± 6 inches. The piping location is determined by checking elevation changes, verifying that pipe passes through proper openings, checking branch connection locations, and visually verifying arrangement. The pipe support review described in paragraph 2 below provides additional verification of proper piping configuration.

Pipe geometry and configuration inspections as described for Unit 1 are slightly different in Unit 2 as described in QA Procedure M-8. This Unit 2 inspection included verifying dimensions on the layout drawings within ± 3 inch per tolerance drawing MC 2676-5. In addition, any abnormal dips, bends, or distortions were identified in such manner that responsible engineering personnel could evaluate any impact on the analysis. Piping location was verified by measuring pipe dimension (elevations, turns, location of components, etc.), verifying that piping passes through the proper openings, and measuring branch connection locations.

2. In June 1979, Duke initiated a reinspection program to review each of approximately 14,000 previously inspected pipe supports of Unit 1 safety-related piping. This review covered all aspects of design including: pipe support type, location, critical dimensions (including clearances), member sizes, pipe attachments, welding, base plate, and concrete expansion anchors. Pipe support location and dimensions were determined by actual measurement. Clearances between piping and support and between integral piping attachments and supports were measured. Clearances between piping and penetrations were visually estimated. Thermal insulation was removed to facilitate inspection of all pipe support details. Nonconformances were evaluated and justified by appropriate engineering review and/or analyses as required. Loose concrete expansion anchor bolts in pipe supports have been corrected as part of the program described herein. A detailed explanation of the concrete expansion anchor bolt program is contained in our response to IE Bulletin 79-02. A small number of Unit 1 pipe

supports could not be inspected under the program described above because of inaccessibility. In each such case, the pipe support drawing was marked as inaccessible. Failure to review these pipe supports is acceptable in view of the relatively small number of inaccessible areas; the relatively low probability of a problem with an inaccessible pipe support or part of a pipe support; and earlier pipe support inspection during erection. Final determination of inaccessible support/restraints has been completed for McGuir Unit 1. These support/restraints were inaccessible for detailed inspection as required by the Reinspection Program (started June 1979). All of these support/restraints have been previously inspected and, under the current program, the general configuration, materials, and location have been verified. Table I provides a summary of the number of support/restraints by system, the reason for inaccessibility, and notation of any supporting information and evaluations since the original inspection. Table II provides a listing of the individual supports/restraints. The result of the Unit 1 reinspection review was a copy of the pipe support drawings, marked as necessary to document the as-built condition. The as-built pipe support location data were provided to the appropriate engineering groups for evaluation of any physical changes on the piping analyses.

A complete reinspection program as described for Unit 1 was not needed for Unit 2. As part of the reinspection of Unit 1, a revised QA Procedure (M-15) was developed to assure a fully satisfactory inspection. This procedure was then used for the inspection of all Unit 2 QA Condition pipe supports, during the normal erection sequence. For certain Unit 2 pipe supports, inspections dated prior to the issuance of the revised procedure were repeated using this procedure. There are no Unit 2 pipe supports that were inaccessible at the time routine erection inspection was performed.

A final interference inspection was also performed on safety related systems defined by this bulletin to resolve any interferences not in accordance with tolerance drawing MC 2676-5.

3. The attachment of pipe supports to embedments was verified during the pipe support review described in paragraph 2 above.
4. Any welded pipe attachments were inspected for proper material and size in accordance with QA Procedures M-4 for Duke Class A, B, and C piping (ASME III, Class 1, 2, and 3) and M-49 for Duke Class F piping. In addition, nozzle reinforcements were inspected for size, thickness, and length through QA Procedure M-8.
5. Valves were inspected to verify through valve identification tags that the correct valve was installed, that it has the correct type of operator, and that it is located properly in relation to the piping layout through QA Procedure M-8. The weights and centers of gravity for valves and valve operators are available from equipment drawings. Valve and valve operators are related to the appropriate drawings through the valve identification tags.

6. Orifice flanges and in-line flow nozzles were inspected for correct configuration and location within the piping system through QA Procedure M-8.

In addition to the above described inspection program, Unit 2 had full benefit of improvements in erection including a) the issue of Construction Procedure #36 which provided simplified instruction based on erection requirements in Specification MCS-1206.00-04-0000, b) extensive training of craft, technical support, and QC personnel, and c) formation of a full time on-site Design Engineering group to resolve pipe support problems or answer questions arising from craft, technical support, or QC personnel.

The described inspection program provides assurance that design documents reflect the as-built conditions. The normal methods of work control provide assurance that engineering groups performing seismic analyses review design documents which define the as-built configuration to evaluate effects on seismic input assumptions. At the completion of construction and the inspection program, we have achieved agreement between design documents (and, consequently, seismic analyses) and the as-built condition. This inspection program will continue to be utilized on all future modification work performed at McGuire. Thus, measures are in place to assure continuing agreement between design documents and as-built conditions. In addition, procedures are in place that assure that pipe supports removed during normal maintenance or inspection are reinstalled per the appropriate design documents.

PART III - STATUS

1. Bulletin activities applicable to McGuire Unit 1 were completed during design and erection, and the item was closed in NRC I. E. Inspection Report 50-369 /81-25.
2. Design, erection, and inspection of McGuire Unit 2 pipe systems are complete for all systems required for Fuel Load. As of February 25, 1983, forty-eight (48) safety-related pipe supports remain to be inspected. These pipe supports will be inspected in accordance with all applicable existing procedures prior to unit heat-up (Mode 4). All other elements of the as-built inspection program have been completed as well as all known outstanding items associated with IE Bulletin 79-14.

TABLE I and II

(Previously submitted in Revision 2 of Duke Response
dated August 5, 1982)