

DUKE POWER COMPANY REGION II
POWER BUILDING, CHARLOTTE, N. C. 28242
ATLANTA, GEORGIA

W. H. OWEN
SENIOR VICE PRESIDENT
ENGINEERING & CONSTRUCTION

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(704) 373-4120

November 9, 1981

Mr. J. P. O'Reilly
Director, U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street
Suite 3100
Atlanta, GA 30338



Re: McGuire Nuclear Station
Unit 1
Docket No. 50-369

Dear Mr. O'Reilly:

In accordance with an October 30, 1981 commitment to Messrs. Kellogg and Murphy, I submit the following information on two (2) deficiencies recently reported at McGuire Nuclear Station. Additionally, I have attached a response on reportability problems associated with the shear plate event. Attachment 1 addresses the problem with missing shear plates on the containment spray heat exchangers; Attachment 2 reports on the improper use of low strength bolting; and Attachment 3 commits to changes in our procedures for reporting deficiencies to the Commission.

The formal reports concerning these deficiencies noted above will be submitted in accordance with reporting procedures.

A handwritten signature in cursive script, appearing to read "W. H. Owen".

W. H. Owen
Senior Vice-President,
Engineering and Construction

WOH:jcm

Attachments (3)

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Omission of Shear Plates - Containment Spray Heat Exchangers

The conditions that led to the omission of shear plates on the containment spray heat exchangers are:

1. The equipment base was erected and the equipment was set and torqued before the drawing was revised to add the shear plates. The addition of the shear plates went unnoticed by the Construction Department personnel responsible for the modification.
2. An erection inspection was performed to the drawing revision that included the shear plates; however, the inspector failed to note the shear plates were missing. It was determined that the structural inspector understood that the mechanical inspector was responsible for inspection of the shear plates even though they are attached to the equipment base.

The erection and inspection of the equipment base was performed during the period 1974 through 1978. In 1980 we took the following actions:

1. We now require by QA Procedure M-18 that Construction Department initiate forms to the crafts identifying any work to be done. This form is required for all original and revised design drawings. All drawing revisions are reviewed and new forms are issued for necessary rework and inspection of revised work.
2. QC inspectors have been instructed to perform all inspection in accordance with QA Procedure M-18. They are now aware that all items showing on structural steel drawings require structural inspection.

While it is not likely that this mistake occurred elsewhere, all other equipment that was modified in a manner similar to the containment spray heat exchangers have been identified. All this equipment will be reinspected to assure all modifications were incorporated. This reinspection will be completed at first availability but no later than February 1, 1982.

Safety Significance - Omission of Shear Plates

The shear plates are required for the containment spray heat exchanger to take the side loading generated by faulted conditions. In the event of a design basis earthquake, the equipment base could have failed, impairing the ability of the equipment to perform its intended safety function.

This problem is not generic outside Duke Power; however, construction procedures will be reviewed at all other Duke sites to assure compliance with design drawings. This review will be completed by January 1, 1982.

Low Strength Bolting

The conditions that allowed an order of 7/8" low strength bolting material to be installed where high strength bolting was specified are:

1. The materials involved were a size not requiring heat code traceability. The materials should have been identified by a grade designation plus a color which designated the code classification. The materials were color coded in accordance with the construction procedure, but because personnel had begun to consider the color code equivalent to the grade designation, some of the studs cut from threaded rod were incorrectly marked. In this particular case, B-8 material was marked as B-7.
2. The instructions to the inspector were to verify only the color code at boltup; therefore, even if these materials had been marked correctly, the low strength bolting would have been accepted on the basis of color coding.
3. This material was a special order for a specific application, and the Construction Department did not recognize that the B-8 material was not interchangeable with B-7 material.

As corrective action taken, we have:

1. Revised inspection instructions to require verification of grade of material at boltup.
2. Instructed personnel involved that grade is independent of color code.
3. Revised the appropriate construction procedures to clarify the applications for low strength bolting.
4. Inspected all safety related applications of 7/8" bolting in Unit 2 and 26 of 64 potential safety related applications in Unit 1. The remaining uninspected joints are inside the Unit 1 reactor building. Inspections completed have uncovered 517 inches of the 600 inches of questionable threaded rod and 96 of 102 nuts. The remaining inches of rod is representative of typical waste in cutting studs from rod.

Additional corrective action to be taken is:

1. Review the use of color codes and eliminate any improper coding.
2. Complete inspection of remaining Unit 1 bolting (7/8") at next scheduled cold shutdown.
3. Change out or determine acceptability of all SA-193 Grade B8 studs and SA-194 Grade 8 nuts identified in safety related joints.

This corrective action will be completed no later than February 1, 1982.

Safety Significance

Although there probably is no remaining questionable stud material in safety related applications, we are continuing to evaluate the impact of a faulted condition. Presently, we have concluded that flange structural integrity is assured except under earthquake conditions. While it appears that reanalysis will justify this material under earthquake loadings, we do not expect final results until 11/13/81.

This problem is not generic outside Duke Power; however, construction procedures will be reviewed at all other Duke sites to assure compliance with design drawings. This review will be completed by January 1, 1982.

Reportability Problems - Containment Spray Heat Exchangers Shear Plates

The omission of the heat exchanger shear plates was determined to be a reportable event by Design Engineering on October 16, 1981. At that time, as required by our procedures, this information was forwarded to the Steam Production Department for reporting to the NRC. This particular item was not handled in a timely manner after the Design Engineering evaluation. Because of this and to preclude future occurrences of this type, the following procedure is currently in effect:

When a determination of reportability is made by the Design Engineering Department under the provisions of 10CFR21, NRC will be notified within twenty-four (24) hours, by phone, by representatives of Duke's Steam Production, Design Engineering, and Quality Assurance Departments.

Written procedures will be in effect by December 1, 1981.