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UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
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NEWARK, NEW JERSEY 07102

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JUN 21 1972

Niagara Mohawk Power Corporation
Attention: Mr. F. J. Schneider
Vice President - Operations
300 Erie Boulevard West
Syracuse, New York 13202

Docket No. 50-220

Gentlemen:

The attached Directorate of Regulatory Operations Bulletin No. 72-1, "Failed Hangers for Emergency Core Cooling System Suction Header," is sent to you to provide you with information we recently received from the Commonwealth Edison Company concerning the Quad Cities Unit 2 boiling water reactor. This information may relate to the design, fabrication and operating experience of certain components at your facility.

Very truly yours,

James P. O'Reilly

James P. O'Reilly
Director

Attachment:
Directorate of Regulatory Operations Bulletin 72-1
"Failed Hangers for Emergency Core Cooling System Suction Header"

cc: Mr. P. A. Burt, Station Superintendent

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Date: June 21, 1972
Directorate of Regulatory
Operations Bulletin 72-1

Attachment

FAILED HANGERS FOR EMERGENCY CORE COOLING SYSTEM SUCTION HEADER

We recently received information from the Commonwealth Edison Company concerning a problem found during startup testing of the Quad Cities 2 boiling water reactor which may relate to the design and long term performance capability of the torus and the emergency core cooling suction header at your facility. The information is as follows:

a. Description of Circumstances

During startup testing the licensee found that four of the pipe hangers which support the 24-inch diameter torus suction header had failed. The 24-inch suction header serves as the primary source of water for the emergency core cooling systems. Water is supplied to the header from the torus through four 20-inch diameter pipes spaced 90 degrees apart. The header is supported between these 20-inch diameter pipes by three equally spaced sets of vertical and horizontal hangers which are attached to support plates welded to the torus. A total of 12 hangers support the 24-inch suction header. The reactor was promptly shut down for investigation and repair following the discovery of the failed hangers.

Three of the four failed hangers were located within a 90 degree section of the header and resulted in a maximum sag in the header pipe of approximately six inches within that section. Four 3/4 inch diameter bolts (threaded their entire length), which secured pairs of shackles to the support plates welded to the torus and to the 24-inch diameter pipe, were found to have failed in double shear. The cause of the bolt failures has not as yet been determined; however, it is known that the suction header experienced vibration as a result of operational testing of the emergency core cooling system. In addition, the bolt holes, which were formed by flame cutting and punching, were found to be irregularly shaped and poorly aligned.

Chicago Bridge and Iron Company, the contractor for the torus and suction header design and installation, has provided a revised design requiring use of 1-inch diameter high strength bolts with smooth unthreaded bearing surface, and has increased the size of the shackles. The change is being implemented for all the hangers.

Commonwealth Edison Company and General Electric Company plan to conduct additional investigation to determine the effect on the suction header and torus of routine plant operations and testing of the emergency core cooling systems.

We have also been informed that the Northern States Power Company's Monticello reactor found one bent suction header hanger bolt and is also currently replacing the hanger bolts with 1-inch diameter bolts.

b. Action Requested of the Licensee

It is requested that you conduct the following inspections for each of your facilities and provide this office with the results of your inspection.

1. An inspection of the hangers, shackles and support plates for the torus suction header to assure that all components are in accordance with design, are in proper position, and do not indicate damage.

2. Inspect each bolt used to attach the shackle and support plate of each hanger (a) for deformation, (b) to establish that bolts are of the specified design, (c) to establish that specified locking devices are installed and (d) that the bolt shank supporting the header weight from the support and shackle is not threaded in the bearing area.

If the results of your inspection indicate the existence of conditions similar to those described above, or if any problems have previously been experienced with failed hangers or bent hanger bolts at your facility, please include in your response a description of the problem and the corrective action taken or planned, if any, and the date of scheduled completion of any planned corrective action. This information should be provided to this office, in writing, within ten days of your receipt of this letter.