

Docket File

50-410



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 12, 1996

Mr. B. Ralph Sylvia  
Executive Vice President, Nuclear  
Niagara Mohawk Power Corporation  
Nine Mile Point Nuclear Station  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: HIGH PRESSURE CORE SPRAY (HPCS) NOZZLE SAFE-END EXTENSION (KC-32)  
WELD INSPECTION FREQUENCY, NINE MILE POINT NUCLEAR STATION,  
UNIT 2 (TAC NOS. M93744 AND M94350)

Dear Mr. Sylvia:

By letter dated September 22, 1995, you requested NRC staff approval to recategorize the weld (KC-32) joining the High Pressure Core Spray (HPCS) nozzle safe end to the safe end extension. During the first refueling outage, an indication was identified in this weld using UT inspection techniques. Niagara Mohawk Power Corporation (NMPC) applied Mechanical Stress Improvement Process (MSIP) to improve the residual stress distribution in the region of the flaw to eliminate the potential for flaw growth. After MSIP application, UT inspections were again performed during the first refueling outage, at a mid-cycle outage during the second fuel cycle, and at the second, third, and fourth refueling outages. No growth in the flaw was identified. NMPC has determined that the stabilization of the flaw is due to the application of MSIP which has maintained the flaw in compression.

By letter dated July 8, 1993, NMPC committed to conduct a UT reinspection of the flaw at each subsequent refueling outage. Nine Mile Point 2 (NMP2) Technical Specification 4.0.5.f states that an inservice inspection program for piping identified in Generic Letter (GL) 88-01 shall be performed in accordance with staff positions. In accordance with GL 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping," weld KC-32 was categorized as an intergranular stress-corrosion cracking (IGSCC) Category "F" weld which requires that all indications be inspected every refueling outage. Welds that have been treated by stress improvement that are classified as IGSCC Category "F" because they do not meet the applicable Staff positions may be upgraded to Category "E" if no adverse change in crack condition is found after four successive examinations. Category "E" welds are examined once every other outage. NMPC has performed four successive examinations which indicate no adverse change in the cracking condition. One exam was performed at a mid-cycle and three were performed during refueling outages. All four of the exams indicate that MSIP has been effective in mitigating any crack growth and the intent of GL 88-01 has been met.

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B. Sylvia

In a conference call held on February 1, 1996, you addressed the NRC staff's concerns regarding variations in the measured flaw size and the effectiveness of the MSIP in arresting deep cracks. The subject safe end weld had been UT examined five times during the last three fuel cycles after application of MSIP. The reported flaw depth varied from 29% to 41% of wall thickness and its length varied from 8.3% (2.5 inches) to 11.3% (3.4 inches) of the weld circumference. In the conference call, you stated that the variations in the flaw size were caused by uncertainties in the UT examinations and is bounded by the maximum flaw size (41% in depth and 11.3% in length) measured in the December 1990 refueling outage. You also stated that NMPC will perform a weld overlay repair on the subject safe end weld if the flaw depth exceeds 41% of the wall thickness or the flaw length exceeds 11.3% of the weld circumference. Your commitment for weld overlay repair as stated above is similar to that made in your previous submittal dated July 8, 1993. Considering the range of the UT results reported in the last five examinations, the NRC staff finds that the NMPC proposed criteria for weld overlay repair of the subject safe end weld are acceptable. Therefore, the NRC staff grants approval to upgrade the weld (KC-32) joining the nozzle safe end to the safe end extension to Category "E."

Sincerely,



Gordon E. Edison, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-410

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B. Ralph Sylvia  
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station  
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Sincerely,

Original signed by:

Gordon E. Edison, Senior Project Manager  
 Project Directorate I-1  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Docket No. 50-410

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