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REC: CARLSON R T NRC	ORG: RHODE G K NIAGARA MOHAWK PWR	1	DOCDATE: 02/09/78 DATE RCVD: 02/15/78
DOCTYPE: LETTER SUBJECT: FINAL DEFICIENCY R WELDING OF STRUCTU	NOTARIZED: NO EPT CONCERNING NOTCHING AND IMPR RAL STEEL COPES AT UNIT 2.	OPER REPAIR	COPIES RECEIVED LTR 1 ENCL 1
PLANT NAME:NINE MI	LE POINT - UNIT 2	REVIEWER DISTRIBU ⁻	INITIAL: XJM FOR INITIAĽ:
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NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

February 9, 1978

Office of Inspection and Enforcement Region I Attention: Mr. R. T. Carlson, Chief

Reactor Construction and Engineering Support Branch

U. S. Nuclear Regulatory Commission 631 Park Avenue King of Prussia, Pennsylvania 19406



Re: Nine Mile Point Unit 2 Docket No. 50-410

Dear Mr. Carlson:

Attached is the final report of the deficiency concerning structural steel copes at our Nine Mile Point Unit 2 construction site. This condition was reported to your staff orally on December 9, 1977 and in our January 9, 1978 letter.

In accordance with Section 50.55(e)(3) of the Commission's regulations, the final report includes a description of the deficiency, an analysis of the safety implications and the corrective action taken.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION Gerald K. Rhode, Vice President System Project Management 780460045 PEF/szd Attachment Xc: Mr. Ernst Volgenau, Director Inspection and Enforcement Branch

U. S. Nuclear Regulatory Commission

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Washington, D. C.



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DESCRIPTION OF DEFICIENCY

On May 3, 1977 Mr. A. Toth, our Region I NRC Inspector, informed personnel at our Nine Mile Point Unit 2 construction site of a potential generic problem involving notching and improper repair welding of structural steel copes.

During fabrication, structural steel was inspected at the fabrication shop on a random basis by Stone & Webster Procurement Quality Control Inspectors in accordance with the Stone & Webster specification. Although this specification required compliance with the AISC specification and Code of Standard Practice, there was no specific attribute indicating that the ½" minimum cope radius or its condition should be checked. Upon receipt at the construction site, structural steel was receipt inspected, but again no specific measurement of copes was required.

Subsequently, site Quality Assurance personnel identified copes in Quality Assurance Category I beams which did not conform to the $\frac{1}{2}$ " minimum radius and notch-free requirements of Section 1.23.2 of the AISC specification.

II. ANALYSIS OF SAFETY IMPLICATIONS

An inspection of the 145 pieces of Quality Assurance Category I structural steel received at the site revealed the following:

- 1. 31 pieces in storage are unsatisfactory due to failure to meet the ½" minimum cope radius.
- 2. 3 pieces in storage are unsatisfactory due to notches in the web cope.
- 3. 2 pieces in storage are unsatisfactory due to porosity and undercut of welding in the cope area.
- 4. 2 pieces installed are unsatisfactory due to improper flange blocks.

Reinspection of the two erected beams showed that they had flange blocks which did not meet the $\frac{1}{2}$ " minimum radius criterion, but that they did not have web copes or notches. Investigation indicated that the flanges at the blockouts were reinforced, providing an acceptable load path, therefore, they are acceptable.

Copes of the thirty-six remaining Quality Assurance Category I structural steel beams with less than ½" radius, improper welds and/or notches could lead to beam failure under certain loading conditions and are therefore not acceptable.



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III. CORRECTIVE ACTION

As a result of a consultation, with AISC authorities concerning the interpretation of the cope criteria, an Engineering and Design Coordination Report has been issued which contains details for ensuring full compliance with AISC cope requirements. This report states that copes must have a minimum radius of $\frac{1}{2}$, and be notch-free. Local gages and bumps with a maximum depth/height of $\frac{1}{8}$ are allowed if smooth and not sharp. The structural steel fabricator, Cives Corporation, has initiated shop practices to provide a nominal $\frac{3}{4}$ cope radius to ensure future compliance with the $\frac{1}{2}$ minimum required by the AISC specification.

All of the coped structural steel beams which have been fabricated, erected and delivered were inspected for compliance with Section 1.23.2 of the AISC specification. Nonconforming pieces have been hold tagged. Repairs will be performed to bring the web copes into compliance with the $\frac{1}{2}$ minimum radius and notch-free criterion.

Stone & Webster's Procurement Quality Control Inspectors have been instructed to check for proper copes when they perform their random inspection of shop fabrication work. Stone & Webster's Field Quality Control Group will also perform a 100 percent inspection of structural steel for correct cope at receipt inspection. These measures will ensure that no nonconforming structural steel will be satisfactorily accepted into storage or installed at the Nine Mile Point Unit 2 construction site.

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