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50-410

REC: CARLSON R T
NRC

ORG: RHODE G K
NIAGARA MOHAWK PWR

DOCDATE: 02/09/78
DATE RCVD: 02/15/78

DOCTYPE: LETTER NOTARIZED: NO
SUBJECT: FINAL DEFICIENCY REPT CONCERNING NOTCHING AND IMPROPER REPAIR
WELDING OF STRUCTURAL STEEL COPEs AT UNIT 2.

COPIES RECEIVED
LTR 1 ENCL 1

PLANT NAME: NINE MILE POINT - UNIT 2

REVIEWER INITIAL: XJM
DISTRIBUTOR INITIAL:

***** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS *****

CONSTRUCTION DEFICIENCY REPORT (10CFR50.55(E)).
(DISTRIBUTION CODE B004)

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DISTRIBUTION: LTR 40 ENCL 28
SIZE: 1P+2P

CONTROL NBR: 780460045

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THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

CHICAGO, ILLINOIS

1954

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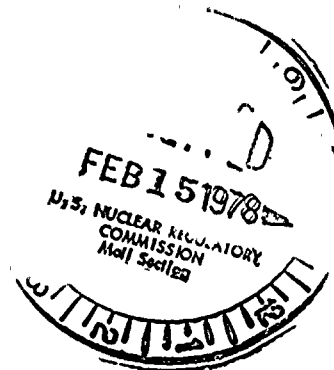
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PHYSICS DEPARTMENT

CHICAGO, ILLINOIS

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

PEF/szd

780460045

Attachment

Xc: ✓ Mr. Ernst Volgenau, Director
Inspection and Enforcement Branch
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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I. 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 $\frac{1}{2}$ " 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 $\frac{1}{2}$ " 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 $\frac{1}{2}$ " 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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1978 FEB 15 AM 9 05

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