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ACCESSION NBR: 8209240184 DOC. DATE: 82/09/17 NOTARIZED: NO DOCKET #
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SUBJECT: Provides info to clarify util position on implementation of
 AWS Structural Welding Code AWS D1.1 re weld undercut.
 Implementation will be documented in PSAR & FSAR.

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September 17, 1982

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Schwencer:

DOCKET NO. 50-410
NINE MILE POINT NUCLEAR STATION - UNIT 2
NIAGARA MOHAWK POWER CORPORATION

The following information is provided to clarify the Nine Mile Point - Unit 2 (NMP2) position on implementation of the American Welding Society (AWS) Structural Welding Code, AWS D1.1, with respect to weld undercut. The NMP2 Preliminary Safety Analysis Report (PSAR) requires that welding of structures will be in accordance with AWS D1.1. Prior to 1980, AWS D1.1 required that undercut not exceed 0.01 inch when the direction of the undercut was transverse to the primary tensile stress. The 1980 edition of AWS D1.1 allows an undercut of as much as 1/16 inch depending on section thickness.

The NMP2 position on undercut is as follows. The undercut shall not exceed 0.01 inch for welds transverse to the primary tensile stress where cyclic fatigue is a design parameter. For such cases, the undercut limit will be noted on the design drawings. Where fatigue is not a design parameter, the maximum undercut shall be 1/32 inch. When the 1980 or later AWS D1.1 Code is specified, the above criteria shall be applied for material up to 1 and 1/2 inch in thickness; for material of greater thickness the provisions of the code that permit larger undercut shall be applied.

Since undercuts are normally intermittent, their effect is reduced. Based on our engineering judgement, the high ductility and toughness of structural grade steels cause the effect of stress raisers to be confined to highly localized areas, smooth out the effect of discontinuities, and reduce stress concentration factors. All of the above factors support the use of 1/32 inch maximum undercut for structural steel design and fabrication.

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WASHINGTON, D.C.

The implementation of this policy at NMP2 is being documented in a PSAR change and will be documented in the FSAR.

Very truly yours,

C. V. Mangan

C. V. Mangan
Vice President-Nuclear
Engineering and Licensing

CVM/NLR:sam

21