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LEMPGES,T.E. Niagara Mohawk Power Corp.
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BUTLER,W. Licensing Branch 2

SUBJECT: Requests approval to invoke visual weld acceptance criteria for structural welding (Rev 2).Revised FSAR pages encl to indicate how use of criteria incorporated into util insp program.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

September 18, 1985
(NMP2L 0492)

Mr. Walter Butler
Chief
Licensing Branch #2
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Butler:

Subject: Nine Mile Point Unit #2
Docket #50-410

Reference: Letter from J.P. Knight (NRC) to D.E. Dutton (NCIG)
dated June 26, 1985

As required by the reference letter, Niagara Mohawk is requesting approval to invoke the Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants (VWAC) Revision 2. As we discussed during our meeting on August 7, 1985, we have attached revised FSAR pages to indicate how the use of this criteria is incorporated into our inspection program. These revised FSAR pages will be incorporated into a future amendment after approval of the program by your staff.

Niagara Mohawk is prepared to provide your staff with opportunities to observe the training for implementing the use of this criteria. As you can see from the attached FSAR pages, we have not taken any exception to this criteria. We would appreciate an expeditious approval of this request in order to realize the maximum benefit of this criteria during the final stages of the inspection program.

Very truly yours,

T. E. Lempges
Vice President
Nuclear Generation

AFZ:saa

xc: R. A. Gramm, NRC Resident Inspector
Project File (2)

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ASME III - 1971 Divisions 1, 5, 9	American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, 1971 edition through Summer 1973 Addenda, Sections II, III, Divisions 1, 5, and 9, including applicable code cases (Exceptions to this code are discussed in Section 3.8.1.)
ASME III - 1974 Division 1	American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, 1974 edition through 1976 Addenda (Exceptions to this code are discussed in Section 3.8.1.)
ASME III - 1977 Subsection NF	American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, 1977 edition, Subsection NF (Exceptions to this code are discussed in Section 3.8.3.)
AWS D1.1-1975 through 1982	American Welding Society, Structural Welding Code (Exceptions to this code are listed in Sections 3.8.4.6 and 3.8.3.2.)
AWS D1.1-83	American Welding Society, Structural Welding Code (This applies to the minimum fillet weld size for SMAW of studs only.)
AWS D12.1-75	American Welding Society, Recommended Practice for Welding Reinforcing Steel Metal Inserts, and Connections in Reinforced Concrete Construction
AWS D1.4-79	American Welding Society, Structural Welding Code - Reinforcing Steel
NCIG-01, Rev. 2, May 7, 1985	Visual Weld Acceptance Criteria (VWAC) for Structural Welding at Nuclear Power Plants, Prepared by Nuclear Construction Issues Group (NCIG)

U.S. Department of Labor, Occupational Safety and Health Administration. Occupational Safety and Health Standards (October 18, 1972).

New York State building codes, as required.

The analysis and design of plant structures follow the current dates of the applicable codes and specifications at the time of design, as listed herein.

3.8.4.3 Loads and Load Combinations

Except when otherwise noted herein and in Sections 3.8.1.3, 3.6.2.3, and 3.8.3.3, the load combinations for Category I reinforced concrete and steel structures are listed in Tables 3.8-11 and 3.8-10, respectively. The load combinations for intake tunnels are listed in Table 3.8-12.

The reinforced concrete structures within the primary containment, the exterior reactor building wall, and the reactor building foundation mat are also designed to

Certified copies of mill test reports showing actual chemical and physical properties are furnished for each heat of steel used in making Category I structural steel.

Welding of structural steel is in accordance with AWS D1.1 with the following clarifications:

AWS D1.1, Section 2.4.3 requires fillers 1/4 in. and larger to be extended beyond the edge of the splice plate or connection material. However, fillers greater than or equal to 1/4 in. are installed using requirements of AWS D1.1, Section 2.4.2, in the following conditions:

1. Restrictions due to space limitations.

2. Presence of tapered gaps due to fabrication or erection tolerances requiring use of multiple shims.

3. When stresses cannot be transferred through the filler plates.

The structural welding code contains the requirement that undercut will not exceed 0.01 in deep when the direction is transverse to the primary tensile stress in the part that is undercut. Unless so noted, all welding performed under the AWS Code is inspected for a maximum undercut of 1/32 in.

Inspections to AWS D1.1 may be performed with the exception that the inspector need not identify with a distinguishing mark all parts or joints that he has inspected and accepted. These inspections must be documented by the Contractor's QA program.

Alternatively, the visual inspection of AWSD1.1 structural welds for the items listed below may be performed using the criteria in Visual Weld Acceptance Criteria For Structural Welding At Nuclear Power Plants (VWAC), issued by the Nuclear Construction Issues Group (NCIG) as described in NCIG-01, Rev. 2, May 7, 1985 (including the corresponding NCIG training). This document is approved by the NRC in their letter of June 26, 1985, from J. P. Knight of NRC to D. E. Dutton of NCIG. The items are:

1. Structural steel

2. Cable tray supports

3. Conduit supports

4. Duct supports

5. Instrumentation supports

6. Equipment supports

The material installation and inspection of high-strength bolts conform to the requirements of the Specification for Structural Joints using ASTM A325 or A490 Bolts.

3.8.4.7 Testing and Inservice Surveillance Requirements

No full-scale structural testing or inservice surveillance is anticipated for the structures described in Section 3.8.4.1. For testing of the materials used in construction, refer to Section 3.8.4.6.

3.8.5 Foundations and Concrete Supports

3.8.5.1 Description of the Foundation and Supports

Table 3.8-13 lists the foundation systems that are used for major Category I structures. Major Category I structures are founded on or below natural bedrock surface. Foundations with bases on or within the top 10 ft of the natural bedrock are designed for an allowable bearing load of 10 tons/sq ft. Foundations with bases deeper than 10 ft below the natural bedrock surface are designed for an allowable bearing load of 20 tons/sq ft. When Category I structures (such as electrical duct lines) are founded on Category I structural fill, they are designed to satisfy the Category I loading combinations as described in Section 3.8.4.3. Allowable bearing pressure on the Category I structural fill is 2 tons/sq ft.

The normal design level for groundwater is el 255 ft msl. The maximum design flood water level is el 261 ft msl. The foundations of most major Category I structures are below the groundwater level. Waterstops are provided at vertical and horizontal construction joints below the flood level of 261 ft msl to prevent seepage of water through the joints.

All Category I structures are constructed in such a manner that a minimum 6-in space is provided between the extremities of the foundations and the excavated rock

TABLE 3.9A-15 (Cont)

6) Surveillance inspections by the ANI of approximately 10% of in-process activities (welding and hydro) documented by SIS report.

b. Supports

1) Welders and welding procedures are qualified to Category I specification requirements invoking ASME Section IX or AWS standards as appropriate to the support type.

2) 100% documentation of completion of all construction steps by Contractor's Construction prior to release to Contractor's QA Program.

3) 100% Vendor FQC visual inspection of all field welds using AWS acceptance criteria (except undercut not exceeding 1/32-in deep is acceptable in lieu of AWS D1.1 requirements) documented by Contractor's QA Program. For alternate weld inspection criteria, see Section 3.8.4.6.

6. Visual examination acceptance for pressure-retaining field welds.

All weld surfaces are sufficiently free from coarse ripples, grooves, overlaps, abrupt ridges, and valleys to allow examination. The following indications are unacceptable:

a. Cracks, external surface

b. Fillet weld dimension not meeting Figure NC/ND 4427-1 or butt weld reinforcement greater than specified in Figure NC/ND 4427-1.

c. Lack of fusion on the surface.

7. Unsatisfactory conditions noted by the SWEC FQC on SIS reports are to be addressed and resolved via existing Engineering and QA procedures.