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

August 12, 1986

MEMORANDUM FOR: Elinor G. Adensam, Director
BWR Project Directorate No. 3
Division of BWR Licensing
Office of Nuclear Reactor Regulation

FROM: David B. Matthews, Chief
Emergency Preparedness Branch
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

SUBJECT: NIAGARA MOHAWK COMMENTS ON THE NINE MILE POINT UNIT 2 SER AND SUPPLEMENTS 1 AND 2

Your memorandum dated July 25, 1986, requested our review of comments submitted by Niagara Mohawk on the Nine Mile Point-2 SER and Supplements 1 and 2. The comments in the emergency preparedness area and our responses are as follows.

Item 138. SER pg. 13-23, last paragraph, second to last sentence - It refers to figure 8, and it should be figure 1.

EPB Response. We agree. This item should be corrected in an errata.

Item 152. SER page 13-20, fifth paragraph says the current NMP-1 TSC is an interim facility. Remove that sentence in its entirety. The new TSC is described in the Emergency Plan.

EPB Response. This item is updated in SSER 3, Section 13.3.2.8.

Item 153. SER page 13-21, second paragraph says the Energy Information Center is designated as the interim Emergency Operations Facility. Remove that sentence. Refer to the Emergency Plan.

EPB Response. This item is updated in SSER 3, Section 13.3.2.8.

David B. Matthews, Chief
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SUPPLEMENT TO

SAFETY EVALUATION REPORT BY THE

OFFICE OF NUCLEAR REACTOR REGULATION

NIAGARA MOHAWK POWER CORP.

NINE MILE POINT UNIT 2

2.5.4.4 Excavation and Backfill For Safety-related Structures

In Table 2.2 (Section 2.5.4.4 of SER) the foundation data for seismic Category I structures are listed. The actual and allowable bearing pressures for intake shaft, intake tunnel and intake structure are not listed.

In table 215-43 of the FSAR, the pressure values are listed for intake tunnel and intake structure.

Therefore Table 2.2 should be changed to include the bearing pressure values for the intake tunnel and intake structure are as follows:

	BEARING PRESSURE MAX KSF	
STRUCTURES	ACTUAL	ALLOWABLE
Intake shaft	----*	----*
Intake tunnel	23.00	40
Intake structure	6.0	20

*The FSAR does not give the value, even though the intake structure is indicated in Fig. 1.2 - 29

3.2.2 System Quality Group Classification

Section 3.2.2 of the SER contains the paragraph:

"Quality Group A components of the RCPB are constructed* in accordance with the ASME Boiler and Pressure Vessel Code (ASME Code), Section III, Division 1, Class 1. Components in fluid systems important to safety that are classified as Quality Group B are constructed in accordance with the ASME Code, Section III, Division 1, Class 2. Components in fluid systems important to safety that are classified as Quality Group C are constructed in accordance with the ASME Code, Section III, Division 1, Class 3. Components in fluid systems that are classified as Quality Group D are constructed to the following codes as appropriate: ASME Code, Section VIII, Division 1, ANSI Standard B31.1.0, "Power Piping"; and storage tank codes such as American Petroleum Institute Code API-650. The codes and standards used in the construction of Quality Group A, B, C, or D components are identified in FSAR TAble 3.2-2. The staff finds this summary list of codes and standards used in the construction of components to be acceptable."

The paragraph should be changed to read:

"Quality Group A components of the RCPB are constructed* in accordance with the ASME Boiler and Pressure Vessel Code (ASME Code), Section III Division 1, Class 1, except MSIV 7A which has been approved to be utilized as an alternate to the requirements of 10 CFR 50.55a per letter dated March 27, 1985, H. R. Denton to B. G. Hooten. Components in fluid systems important...."

The applicant's request to authorize utilization of an alternate to the requirements of 10 CFR 50.55a has been approved for Nine Mile Point, Unit 2 in a letter dated March 27, 1985, H. R. Denton to B. G. Hooten.

3.5.1.3 Turbine Missiles

Section 3.5.1.3.8 of SER, second paragraph states:

"Turbine control is accomplished with an electrohydraulic control (EHC) system. The EHC system consists of an electronic governor using solid-state control techniques in combination with a high-pressure hydraulic actuating system. The system includes electrical control circuits for steam pressure control, speed control, load control, and steam control valve positioning."

The applicant stated that the load control capability is not included in the NMP-2 design and cited FSAR section 10.2, page 10.2-3a as the reference. After reviewing FSAR section 10.2 including page 10.2-3a, the staff could not find the document to support the applicant's statement. However in further research, the staff has found two sources to support the statement in the existing SER.

(1) The turbine overspeed protection system diagram as shown in FSAR, figure 10.2-3, sheet 1 of 3, does identify the electrical circuitry (i.e. contacts KT101, KT102, and KT115) of the load control logic.

(2) Nuclear Steam turbine-generators of GE manufacture, which NMP-2 uses, are equipped with two types of speed control system: mechanical hydraulic control and electro hydraulic control (EHC). The EHC system sends electrical signals to servomotors and solenoid valves to position the steam valves. There are two types of EHC systems (both of an analog type) - the MK I design and MK II design. Both designs have the same basic elements: speed control, load control, flow control, and protection systems. The EHC system has three independent levels of speed sensing: (1) the EHC speed and load control circuitry; (2) the emergency trip device; and (3) the backup overspeed trip circuitry. A speed signal is obtained from each of two magnetic pickups on a toothed wheel at the high-pressure turbine shaft. An increase in either of these speed signals will close the control and intercept valves. The system will continue to operate if one speed signal is lost, but loss of both signals will result in the turbine tripping through the emergency trip system. If the EHC system senses a load rejection, the power load unbalance circuitry will send a signal to fast acting solenoid valves which in turn close the steam control and intercept valves. (Reference: "Probability of Missile Generation in General Electric Nuclear Turbines," General Electric Company, Large Steam Turbine - Generator Department, January, 1984.)

The staff concludes that the load control in the existing SER is valid unless proven otherwise.

Section 3.5.1.3.8 of SER, third paragraph contains the sentence.
"At 103% of rated speed, the EHC will close the governor and intercept valves."

According to the latest revision (Rev. 0) of FSAR section 3.5 page 3.5 - 16, the EHC system will close the governor and intercept valves at 102% of rated speed.

The underlined number should read 102%.

3.8 Design of Seismic Category I Structures

3.8.1 Concrete Containment

This subsection of the SER contains the sentence "The drywell is a stainless-steel clad, steel-lined, reinforced - concrete vessel in the shape of a frustum of two cones."

The drywell steel liner does not have a stainless-steel cladding.

The underlined words should be deleted.

3.8.3 Concrete and Structural Steel Internal Structures
This Subsection of the SER Contains the Sentences:

(a) "For steel internal structures, the American Institute of Steel Construction (AISC) specification, "Specification for the design, fabrication and erection of structural steel for buildings", was used."

In section 3.8.3.2.2 of the FSAR, it is indicated that for star truss the design and construction criteria are actually in accordance with ASME Section III subsection NF.
Modification (as underlined) to the term "steel internal structures" should be made as follows:

For steel internal structures with the exception of the star truss which was designed and constructed in accordance with ASME Section III subsection NF

(b) "These include complying with the positions of RGs 1.10, 1.15, 1.55. 1.94; ACI Standard 349-1980; ASME Code, Section III, Division 2; ASME Code, Section III, Division 1, Subsections NE and NF; AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.""

The applicant actually used ACI Standard 349-76.

The underlined number should read "76".

3.8.4 Other Seismic Category I Structures

3.8.5 Foundations

These subsections of the SER contain the sentence:

"The materials of construction, their fabrication, construction, and installation, are in accordance with the ACI Standard 318-71 and the AISC specification for concrete and steel structures, respectively."

In Section 3.8.4.2 of FSAR, applicable codes, standards and specifications, ACI Standard 301-72 "Specification of structural concrete for building" is listed.

Since the sentence emphasizes materials, mention of ACI Standard 301-72 is in order.

The underlined words should be changed to read "ACI Standards 318-71 and 301-72"

3.9.2.2 Seismic Subsystem Analysis

Section 3.9.2.2 of the SER contains the paragraph:

"RG 1.61, Rev. 0, "Damping Values for Seismic Design of Nuclear Power Plants," contains recommended values of damping to be used in the seismic analysis of structures, systems, and components. The damping values used by the applicant for piping systems are the same as those specified in RG 1.61 and are acceptable. In a letter from C. V. Mangan to A. Schwencer dated October 11, 1984, the applicant has asked to use revised damping values recently developed by the Pressure Vessel Research Council for piping seismic analyses. The applicant has proposed to use these new damping values as an alternative to the damping values given in RG 1.61. The applicant has stated that these new damping values will be used only when needed to resolve design or as-built verification items. The staff is currently reviewing the applicant's request and will report its findings in a supplement to this SER."

This request has been approved by the NRC in November, 1985. The underlined sentence should be changed to read, "In a letter from H. R. Denton to B. G. Hooten dated November 22, 1985, the staff has approved the use of ASME Code Case N-411 for NMP-2 in the response spectrum seismic analysis of piping."

3.9.3.1 Loading Combinations, Design Transients, and Stress Limits

Section 3.9.3.1 of the SER contains the sentence:

"For those piping systems identified as essential that are subjected to loads in excess of Service Level B limits, their functional capability has been evaluated in accordance with the criteria provided in the GE Topical Report, NEDO-21984, "Functional Capability Criteria for Essential Mark II Piping," dated September 1978, which the staff has previously reviewed and approved."

21984 is a typographical error.

The underlined number should read "21985".

3.10.3.3 Evaluation

Section 3.10.3.3 of SSER-2 contains the paragraph:

"The applicant has defined the capability of the SRV accumulators to actuate the valves twice against the maximum drywell design pressure of 45 psig, which is equal to at least six SRV actuations at a drywell pressure of 0.75 psig. Therefore, the applicant has demonstrated that NMP-2 has the capability for both short- and long-term cooling. The staff finds this acceptable."

The underlined word should be changed to read: "once"

A re-evaluation of the applicants submittals regarding verification of qualification of accumulators on ADS valves was performed. The staff concurs that this change does not impact the qualification of the accumulators due to the large inventory available, and therefore satisfies the requirements of TMI Action Item II.K.3.28.

5.2.1.1 Compliance With 10 CFR 50.55a

Section 5.2.1.1 of the SER contains the paragraph:

"The ASME Code, Section III, editions and addenda used in the construction of these Quality Group A components, are identified in FSAR Table 3.2-4 and are those that are required to ensure compliance with 10 CFR 50.55a or are, where appropriate, later editions or addenda to the Code."

The paragraph should be changed to read:

"...in FSAR Table 3.2-4 and are those that are required to ensure compliance with 10 CFR 50.55a, or have been approved to be used as an alternate to the requirements of 10 CFR 50.55a per letter dated March 27, 1985, H. R. Denton to B. G. Hooten, or are, where appropriate, later editions or addenda to the Code."

The applicants request to authorize utilization of an alternate to the requirements of 10 CFR 50.55a has been approved for Nine Mile Point, Unit 2 in a letter dated March 27, 1985, H. R. Denton to B. G. Hooten.

5.2.1.2 Application Code Cases

Section 5.2.1.2 of the SER contains the paragraph:

The basis for acceptance in the staff review has been the Code cases found to be acceptable in RG 1.84, "Code Case Acceptability - ASME Section III, Design and Fabrication," and RG 1.85, "Code Case Acceptability - ASME Section III, Materials," and the Code cases previously found to be acceptable by the staff for plants similar to NMP-2 before publication of RGs 1.84 and 1.85. The staff concludes that compliance with the requirements of these Code cases will result in a component quality level that is commensurate with the importance of the safety function of the RCPB. This constitutes an acceptable basis for satisfying the requirements of GDC 1, and is, therefore, acceptable.

The paragraph should be changed to read:

"...Materials," and those approved via Footnote 6 of 10 CFR 50.55a, i.e. Code case N-413, and the Code cases previously...."

The applicant's request to authorize the use of ASME Code case N-413 has been approved for Nine Mile Point, Unit 2 in a letter dated April 2, 1985, A. Schwencer to B. G. Hooten.

5.2.3 Reactor coolant pressure boundary material.

The third sentence in the third paragraph of this section in the SER states:

"This includes conformance with the recommendations of RG 1.44, "Control of the use of Sensitized Stainless Steel" and the requirements of NUREG-0313, Revision 1."

The required conformance should also include the applicant's alternative approaches that are acceptable to the staff as described in SER 4.5.1.

Insert the following between "steel" " and "and":

", the applicant's alternative approaches that are acceptable to the staff as described in SER 4.5.1 (page 4-12),"

6.1.1 Engineered Safety Features Materials

The third sentence in the second paragraph of this section of SER states:

"Fracture toughness was not indicated as having been performed on ferrite materials in the ESF systems."

The word "testing" was inadvertently omitted from the above sentence.

Add the word "testing" after "toughness".