



NIAGARA MOHAWK POWER CORPORATION/NINE MILE POINT, P.O. BOX 63, LYCOMING, NY 13093/TELEPHONE (315) 349-2882

B. Ralph Sylvia
Executive Vice President
Nuclear

March 8, 1995
NMP2L 1529

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Nine Mile Point Unit 2
Docket No. 50-410
NPF-69

Subject: *Proposed License Amendment - Up-rated Operation, Response to Request for Additional Information*

Gentlemen:

In a letter to the Nuclear Regulatory Commission (NRC) dated July 22, 1993 (NMP2L 1397), Niagara Mohawk Power Corporation (NMPC) proposed a license amendment to allow Nine Mile Point Unit 2 (NMP2) to operate at an uprated power of 3467 megawatts thermal. During the course of the Staff's review of this proposed license amendment, the NRC has determined that additional information regarding instrument setpoint methodology, as identified in its letter to NMPC dated February 24, 1995, is required to complete its review of this matter. Attached to this letter is the requested additional information.

Niagara Mohawk has provided a copy of this response to the appropriate state representative.

Very truly yours,

B. Ralph Sylvia
Executive Vice President - Nuclear

BRS/KWK/kab
Attachment

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PDR ADOCK 05000410
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ADD 1

xc: Regional Administrator, Region I
Mr. B. S. Norris, Senior Resident Inspector
Mr. L. B. Marsh, Director, Project Directorate I-1, NRR
Mr. D. S. Brinkman, Senior Project Manager, NRR
Ms. Donna Ross
Division of Policy Analysis and Planning
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, NY 12223
Records Management

ATTACHMENT

Request for Additional Information

The licensee's submittal for power uprate does not discuss the instrument setpoint methodology. The NRC staff is unable to determine whether the GE setpoint methodology discussed in GE Topical Report NEDC-31336 is used, or a plant specific setpoint methodology has been used for this application.

If a plant specific setpoint methodology is used, then provide the following information:

1. Discuss your setpoint methodology and include a discussion on how it differs from NEDC-31336.
2. The calculations and related documents that were utilized to derive the new trip setpoint and allowable values for the following parameters:
 - a. reactor vessel high pressure scram
 - b. high pressure ATWS RPT

If the GE setpoint methodology is used, then provide the following information:

1. Reference the GE topical report in this report.
2. The NRC staff's Safety Evaluation Report (SER) on GE Topical Report NEDO-31336, identified certain plant specific information needed to justify the application of the report. Provide a discussion regarding the applicability of the topical report.
3. Confirm that the calculation for the instrument setpoint is identical to the plants previously reviewed by the NRC staff for power uprate (e.g., Fermi-2, WNP-2, Limerick 1 and 2, and Peach Bottom 2 and 3). If not, then justify the differences.

Also, for either methodology, provide the necessary information in either Table 5.1 or elsewhere for the NRC staff to determine if power uprate results in any decrease in the margins between the allowable value of instrument setpoints and analytical limit. Provide justification for any instrument where such condition occurs.

Response

General Electric (GE) Report NEDC-31336 was used to perform the power uprate setpoint calculations for NMP2. Prior to development of the relatively new GE setpoint methodology presented in NEDC-31336, NMP2's current rated setpoints were developed utilizing an older GE setpoint methodology. The current rated setpoints, which were developed utilizing the older methodology, were reviewed and confirmed to also be conservative or equal with respect to the new GE setpoint methodology of NEDC-31336.

To establish setpoints for power uprate conditions, affected setpoints were increased proportionately to the change in plant parameter due to power uprate conditions. GE setpoint methodology NEDC-31336 was utilized to confirm that adequate margin is maintained for power uprate conditions.

The GE setpoint methodology, governed by GE topical report NEDC-31336, is referenced in Appendix F, Section F.4.1, "Generic Instrument Setpoint Methodology" of Licensing Topical Report (LTR) NEDC-31897P-1, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate." The NMP2 Licensing Topical Report, NEDC-31994P, Section 5.1, identifies this as the applicable setpoint methodology by way of reference to "...Appendix F of Reference 5-1" in the first paragraph.

NEDC-31336 is a top-level reference document which has been approved for use by the NRC. It defines the overall approach used in setpoint calculations. In addition (as noted in the NRC SER on NEDC-31336), each plant must provide its own plant-unique analysis for setpoints, which reflects plant-specific information. The plant-specific information pertains to:

1. Operational plant parameters such as operating pressures, temperatures;
2. Plant instrument data such as make, model no., range, span;
3. Plant environmental data such as the trip environment (temperature, seismic, radiation) seen by the instrument, and
4. Instrument drift which is a quantifiable, normally-distributed random variable (published design allowances used in setpoint calculations are validated by NEDC-32160P, BWROG LTR on Calibration Interval Extension, which is based on actual field data).

Hence, the overall reference topical report NEDC-31336 and the plant-specific setpoint calculations (including plant-specific data) are both applicable to the NMP2 power uprate.

The calculation methodology is identical to previous power uprate setpoint calculations which used LTR NEDC-31336, including Fermi-2, WNP-2, Limerick 1 and 2, and Peach Bottom 2 and 3.

For setpoints using NEDC-31336, there is no decrease in margins, from current-rated power to uprated power. The following tables provide the margins for the pre and post uprate setpoints for Reactor Vessel High Pressure Scram and High Pressure ATWS RPT:

TABLE 1A
CALCULATED VALUES (PSIG) VIA NEDC-31336
CURRENT RATED CONDITION

<u>FUNCTION</u>	<u>AL</u>	<u>AV</u>	<u>NTSP</u>	<u>Margin (AL-AV)</u>	<u>Margin (AV-NTSP)</u>
High Pressure Scram	1071	1061	1054	10	7
High Pressure ATWS RPT	1080	1076	1069	4	7

TABLE 1B
TECHNICAL SPECIFICATION VALUES (PSIG) FOR CONSERVATISM
CURRENT RATED CONDITION

<u>FUNCTION</u>	<u>AL</u>	<u>AV</u>	<u>NTSP</u>	<u>Margin (AL-AV)</u>	<u>Margin (AV-NTSP)</u>
High Pressure Scram	1071	1057	1037	14	20
High Pressure ATWS RPT	1080	1065	1050	15	15

TABLE 2A
CALCULATED VALUES (PSIG) VIA NEDC-31336
POWER UPRATE CONDITION

<u>FUNCTION</u>	<u>AL</u>	<u>AV</u>	<u>NTSP</u>	<u>Margin (AL-AV)</u>	<u>Margin (AV-NTSP)</u>
High Pressure Scram	1086	1076	1069	10	7
High Pressure ATWS RPT	1095	1091	1084	4	7

TABLE 2B
TECHNICAL SPECIFICATION VALUES (PSIG) FOR CONSERVATISM
POWER UPRATE CONDITION

<u>FUNCTION</u>	<u>AL</u>	<u>AV</u>	<u>NTSP</u>	<u>Margin (AL-AV)</u>	<u>Margin (AV-NTSP)</u>
High Pressure Scram	1086	1072	1052	14	20
High Pressure ATWS RPT	1095	1080	1065	15	15

TERMS

AL = Analytical Limit

AV = Allowable Value

NTSP = Nominal Trip Setpoint

Each table shows the calculated margin between AL/AV and AV/NTSP for each of the instrumentation functions. By comparing Table 1A and 2A, it can be seen that the margins for pre and post-uprate conditions are the same.

Tables 1B and 2B reflect the calculated margins based on the Technical Specification values that were selected with additional conservative margin included. A comparison of Tables 1B and 2B also illustrates that the same margins are maintained for pre and post-uprate conditions.

Hence, it is concluded that the margins for a given function utilizing NEDC-31336 are not decreased from pre to post-uprate conditions.