UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Niagara Mohawk Power Corporation	)	Docket No. 50-410
	)	
Nine Mile Point Unit 2	)	

APPLICATION FOR AMENDMENT TO OPERATING LICENSE

Pursuant to Section 50.90 of the Regulations of the Nuclear Regulatory Commission, Niagara Mohawk Power Corporation (NMPC), holder of Facility Operating License No. NPF-69, hereby requests that the current technical specifications (CTS) set forth in Appendix A to that license be amended. The proposed changes have been reviewed in accordance with Section 5.5, "Review and Audit," of the NMP2 CTS.

The proposed changes revise the NMP2 CTS to reflect a format and content consistent with NUREG-1434, Revision 1, including certain generic changes approved through September 1, 1998. The proposed change also extends the interval of selected Surveillance Requirements from 18 months to 24 months to support conversion of NMP2 to a 24-month fuel cycle and includes pending changes to the CTS as described in Attachment 2. In addition, changes are included as described in Attachment 3 to this letter which represent deviations from both NUREG-1434, Revision 1 and the NMP2 CTS.

The proposed changes will not authorize any change in the types of effluents or in the authorized power level of the facility in conjunction with this Application for License Amendment. Supporting information and analyses which demonstrate no significant hazards consideration pursuant to 10CFR50.92, are included in Volumes 1 through 11 of the attached enclosure.

Wherefore, Applicant respectfully requests that Appendix A to Facility Operating License No. NPF-69 be amended in the form attached hereto as contained in Tabs "ITS" and "Bases" of Volumes 1 through 11 of the Enclosure to this letter.

NIAGARA MOHAWK POWER CORPORATION

By _____
John T. Conway
Vice President Nuclear Generation

Subscribed and Sworn to before me
on this 16 day of October 1998.

_____
NOTARY PUBLIC

JOHN C. JOSH
Notary Public, State of New York
No. 4837303
Qualified in Oswego County
Commission Expires Feb. 28, ~~19~~ 2000

ATTACHMENT 1

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

REQUEST FOR LICENSE AMENDMENTS

Nine Mile Point Unit 2 (NMP2) Improved Technical Specification (ITS) Submittal Synopsis

The NMPC NMP2 Improved Technical Specification (ITS) submittal consists of 12 volumes. This attachment describes each component of the NMP2 ITS submittal, and their organization within each volume. This attachment is designed to facilitate distribution of each NMP2 ITS section within the NRC and to familiarize reviewers with the content and organization of each section. A description of each volume included in the NMP2 ITS submittal follows.

Volume 1:

Volume 1 contains the NMP2 Split Report which includes the Application of the Technical Specification Selection Criteria and a Relocation Matrix. This document lists each of the NMP2 Current Technical Specifications (CTS) and shows the results of NMPC's application of the 10CFR50.36 criteria for retention of requirements in Technical Specifications. For each of the NMP2 CTS, this document identifies whether or not the requirement is retained in the NMP2 ITS, and the basis for its retention or exclusion. For those CTS items that did not meet the selection criteria and have not been retained in the proposed ITS, a detailed explanation of the application of the selection criteria and justification for relocation is provided.

Volumes 1 through 11

Volumes 1 through 11 contain the NMP2 Improved Technical Specifications and associated supporting documentation for the proposed amendment request. The volumes are ordered on a Chapter/Section basis, as follows, to facilitate distribution to NRC staff reviewers:

Volume 1:	NMP2 Split Report (as described above)			
	NMP2 ITS	Chapter	1.0,	Use and Application
		Chapter	2.0,	Safety Limits
		Section	3.0,	Limiting Condition for Operation Applicability and Surveillance Requirement Applicability
Volume 2:	NMP2 ITS	Sections	3.1,	Reactivity Control Systems
			3.2,	Power Distribution Limits
Volumes 3 & 4:	NMP2 ITS	Section	3.3,	Instrumentation

Volume 5:	NMP2 ITS	Sections	3.4, 3.5,	Reactor Coolant System Emergency Core Cooling Systems and Reactor Core Isolation Cooling System
Volumes 6 & 7:	NMP2 ITS	Section	3.6,	Containment Systems
Volume 8:	NMP2 ITS	Section	3.7,	Plant Systems
Volume 9:	NMP2 ITS	Section	3.8,	Electrical Systems
Volume 10:	NMP2 ITS	Sections	3.9, 3.10,	Refueling Operations Special Operations
Volume 11:	NMP2 ITS	Chapter Chapter	4.0, 5.0,	Design Feature Administrative Controls

Each volume contains, as appropriate, the NMP2 ITS Specifications and Bases, a markup of the NMP2 CTS, a discussion of changes to the NMP2 CTS, the No Significant Hazards Evaluations for each of the changes to the CTS, and markup of NUREG-1434 (or NUREG-1433, if applicable), Revision 1 to indicate the NMP2 ITS and justifications for deviations from the NUREG. Each Chapter/Section in a volume is organized as follows:

Tab: ITS

This tab contains the proposed NMP2 Improved Technical Specifications.

Tab: Bases

This tab contains the proposed NMP2 Improved Technical Specification Bases (as applicable).

Tab: CTS Markups/DOCs

This tab contains a copy of the NMP2 CTS pages annotated to provide a cross-reference to the equivalent NMP2 requirements, showing the disposition of the existing requirements into the NMP2 ITS.

The annotated copy of the NMP2 CTS pages is marked with sequentially numbered "clouds" which provide a cross-reference to a Discussion of Changes (DOCs) between the NMP2 CTS and the NMP2 ITS. The ITS number is noted on the top right corner of each CTS page, identifying the ITS LCO where the CTS requirement is located. Items on the CTS page that are located in one or more ITS locations or sections have the appropriate location(s) noted adjacent to the items. When the ITS requirement differs from the CTS requirement, the CTS being revised is annotated with an alpha-numeric designator. This designator relates to the appropriate DOC. Each DOC provides a justification for the proposed change. The DOC for each ITS section immediately follows the marked up CTS pages. The alpha-numeric designator also relates the proposed change to the applicable No Significant Hazards Evaluation (NSHE).

The alpha-numeric designator is based on the category of the change and a sequential number within that category. The changes to the NMP2 CTS are categorized as follows:

A ADMINISTRATIVE - associated with restructuring, interpretation, and complex rearranging of requirements, and other changes not substantially revising an existing requirement. There is a single NSHE for this category.

M TECHNICAL CHANGES - MORE RESTRICTIVE - changes to the CTS being proposed in converting to the ITS, resulting in added restrictions or eliminating flexibility. There is a single NSHE for this category.

L TECHNICAL CHANGES - LESS RESTRICTIVE - changes where requirements are relaxed, relocated, eliminated, or new flexibility is provided. There are two groups of changes - "Generic" and "Specific" in this category. Each "Specific" LESS RESTRICTIVE change has a corresponding unique NSHE. The "Generic" LESS RESTRICTIVE changes are subdivided into five subcategories, each of which is identified uniquely as either LA, LB, LC, LD, LE changes. Each subcategory of "Generic" LESS RESTRICTIVE change is justified by a single NSHE. The subcategories and their designation are as follows:

The "LA" changes consist of relocation of details out of the CTS and into the Bases, USAR, QA Manual, or other plant controlled documents. Typically, this involves details of system design and function or procedural details on methods of conducting a surveillance.

The "LB" changes are related to the extension of an instrument Completion Time or Surveillance Frequency in accordance with NRC approved vendor topical reports.

The "LC" changes reflect elimination of various instrumentation requirements, where the instrument is an alarm or an indication-only instrument function that does not otherwise meet the NRC Technical Specification selection criteria.

The "LD" changes reflect extension of the refueling outage surveillance interval from 18 months to 24 months for surveillances other than Channel Calibrations.

The "LE" changes reflect extension of the refueling outage surveillance interval from 18 months to 24 months for Channel Calibration surveillances.

R RELOCATED - specific requirements that do not meet the NRC Technical Specification selection criteria. These items are being

relocated to other plant documents as part of the conversion to ITS. There is a single NSHE for this category.

Tab: ISTS/JFDs

This tab contains a copy of NUREG-1434 (or NUREG-1433, if applicable), Revision 1, Improved Standard Technical Specifications (ISTS) which have been annotated to indicate deviations between the NUREG (as modified by generic changes approved through September 1, 1998) and the proposed NMP2 ITS. Justifications for each of the deviations are provided with the individual ITS Chapters/Sections. The annotated copy of NUREG-1434, Revision 1, and the discussion of the deviations are cross-referenced by "clouds" which are numbered sequentially for each Chapter/Section.

Each line item in the annotated copy of NUREG-1434, Revision 1, Technical Specifications contains a cross-reference to the equivalent NMP2 CTS requirement and/or discussion of change, as appropriate. This cross-reference is intended to provide reviewers with a quick reference to the equivalent CTS section.

Tab: ISTS Bases/JFDs

This tab contains a copy of NUREG-1434 (or NUREG-1433, if applicable), Revision 1, Technical Specifications Bases (as applicable) which have been annotated to indicate deviations between the NUREG Bases (as modified by generic changes approved through September 1, 1998) and the proposed NMP2 ITS Bases. Justifications for the deviations are provided with the individual ITS Chapters/Sections. The annotated copy of NUREG-1434, Revision 1, and the discussion of the deviations are cross-referenced by "clouds" which are numbered sequentially for each Chapter/Section.

Tab: NSHE

This tab contains the required 10CFR50.92 No Significant Hazards Evaluations (NSHEs) for the proposed changes and demonstrates that the changes associated with the corresponding ITS section do not constitute a significant hazard consideration. The NSHEs are categorized as Administrative, Relocated, More Restrictive, Less Restrictive - Generic, and Less Restrictive - Specific, and are identified by an alpha-numeric designator relating the marked-up CTS and DOC to the applicable NSHE.

Volume 12: NMP2 CTS markup in CTS order.

This volume contains a copy of all the NMP2 CTS pages that have been marked up in Volumes 1 through 11. The CTS pages are organized in CTS order. Multiple copies of certain pages of the NMP2 CTS appear in this volume since these same pages appear more than once in Volumes 1 through 11. Multiple copies of the same CTS pages are further organized in ITS order. The contents of this volume demonstrate that all aspects of the NMP2 CTS have been addressed in this proposed amendment.

ATTACHMENT 2

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

REQUEST FOR LICENSE AMENDMENTS

Nine Mile Point Unit 2 (NMP2) Improved Technical Specifications (ITS) Conversion Document Status

This attachment identifies a listing of current technical specifications (CTS) changes that are pending approval from the NRC which have been included in the NMP2 ITS submittal.

1. February 5, 1998 (NMP2L 1756), Changes to 10-Year ISI/IST Program

2. October 16, 1998 (NMP2L 1821), Changes to Service Water System

ATTACHMENT 3

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

REQUEST FOR LICENSE AMENDMENT

Improved Technical Specifications (ITS) Deviations from the Nine Mile Point Unit 2 (NMP2) Current Technical Specifications (CTS) and NUREG-1434, Rev. 1

This attachment provides a list of the NMP2 ITS changes which represent deviations from both NUREG-1434 (or NUREG-1433, if applicable), Revision 1, and the NMP2 CTS.

- Changing the Scram Discharge Volume Vent and Drain Valve ACTIONS to allow continued operation with one valve in a line inoperable by isolating the penetration within 7 days (ACTION A) and to allow continued operation with two valves in a line by isolating the penetration within 8 hours (ACTION B). The ISTS requires the valve(s) to be restored to Operable status within 7 days. This allowance has been previously approved for WNP-2 (CTS and ITS) and LaSalle (CTS). This approval (for changes to the WNP-2 and LaSalle CTS) was after NUREG-1434, Rev. 0 was issued. (ITS 3.1.8, DOC L.1)

- Adding a Note to the RPS (Functions 3 and 4) and Isolation (MSIV Functions) Instrumentation Specifications exempting the sensors from response time testing and a Note to the ECCS – Operating and – Shutdown Specifications exempting the instrumentation from response time testing. This is based upon the BWROG topical report on response time testing. This is a generic change that has not been approved yet. (ITS 3.3.1.1, DOC L.10; ITS 3.3.6.1, DOC L.13; ITS 3.5.1, DOC L.8; and ITS 3.5.2, DOC L.5)

- Allowing the feedwater pump to be removed from service in lieu of shutting down the unit to < 25% RTP when a feedwater and main turbine high water level channel is inoperable and untripped. This is a generic change that has not been approved yet. (ITS 3.3.2.2, DOC L.5)

- Adding a Note to ITS 3.3.3.1, 3.3.3.2, 3.3.8.2, 3.3.8.3, 3.4.7 to allow 6 hours to do Surveillance testing of the Post Accident Monitoring, Remote Shutdown System, RPS logic bus EPAs, RPS scram solenoid bus EPAs and Leak Detection System instrumentation channels prior to entering Actions. The CTS does not have this allowance. This allowance has been approved at WNP-2 for applicable specifications. (ITS 3.3.3.1, DOC L.1; ITS 3.3.3.2, DOC L.2; ITS 3.3.8.2, DOC L.3; ITS 3.3.8.3, DOC L.3; and ITS 3.4.7, DOC L.3)

- Adding an allowance to only remove the associated ATWS-RPT breaker (fast speed or slow speed, as applicable) from service, in lieu of removing the entire pump from service. (ITS 3.3.4.2, DOC L.4)

- Changing the Allowable Values for a) the LPCI and HPCS minimum flow valves instrumentation; b) the HPCS suppression pool water level swap over instrumentation; c) the Loss of Voltage and Degraded Voltage Functions including time delays; d) the Undervoltage, Overvoltage, and Underfrequency Functions for the RPS Logic Bus EPAs; and e) the Undervoltage, Overvoltage, and Underfrequency Functions for the RPS Scram Solenoid Bus EPAs. (ITS 3.3.5.1, DOC L.11; ITS 3.3.5.1, DOC M.4; ITS 3.3.8.1, DOCs M.2 and L.8; ITS 3.3.8.2, DOCs M.4 and L.4; and ITS 3.3.8.3, DOCs M.3 and L.4)

- Deleting the MODE 1 and 2 requirements for certain Shutdown Cooling Isolation Functions (RHR Equipment Area Temperature, Reactor Building Pipe Chase Temperature, Reactor Building Temperature, and Reactor Vessel Water Level - Low, Level 3). This has been approved at WNP-2 for applicable specifications. (ITS 3.3.6.1, DOC L.5)

- Deleting the Group 4 valves from isolation instrumentation requirements. These valves are not PCIVs, therefore their instrumentation should not be required as an isolation function. However, these valves ensure that flow is not inadvertently diverted from the reactor vessel when the associated LPCI subsystem is initiated. Therefore, they are included in the ITS as ECCS instrumentation. Furthermore, only one of the two in-series valves in each flow path needs to close to isolate the flow path and preclude flow diversion from the associated LPCI subsystem. Thus, the ITS requires only one valve in each flow path to be Operable, and the valve will be the associated divisionalized valve. Since these valves are not PCIVs, the Manual Isolation Pushbutton for the Group 4 valves is also deleted. (ITS 3.3.6.1, DOC A.7 and ITS 3.3.5.1, DOCs L.9 and L.10)

- Changing the requirement to only requiring 2 channels of degraded voltage and loss of voltage in lieu of three channels. The logic is two-out-of-three, thus with only two channels, single failure criterion is still met (The DG safety function is still maintained: 2 DGs can still perform the safety function). This is consistent with Minimum Channels Operable column in the CTS. (ITS 3.3.8.1, DOC L.2)

- CTS 3.4.1.1.b requires the THERMAL POWER to be in the unrestricted zone of Figure 3.4.1.1-1. However, there is no Surveillance Requirement that verifies this requirement on a periodic basis. ITS SR 3.4.1.1 has been added to verify operation is in the "Unrestricted Zone" of ITS Figure 3.4.1-1 every 12 hours. This will ensure that entry into a region where potential instabilities can occur will not go undetected. (ITS 3.4.1, DOC M.2)

- Changing the Frequency for performing CTS 4.4.1.1.4, determining the APRM and LPRM baseline noise level the first time the unit is in the Restricted Zone, from 2 hours to 8 hours. The way this was done was that the requirement on how to do the baseline determination was relocated to the Bases, and the 2 hours was deleted since the requirement to verify noise is within the limits within 8 hours (Required Action B.1) ensures a baseline has been determined within the same 8 hours. (ITS 3.4.1, DOC L.1)

- Changing the CTS Frequency in 4.4.3.2.1.b for monitoring the floor drain leakage rate from 8 hours to 12 hours. The ISTS require this Surveillance, as well as the airborne radioactivity monitoring Surveillance to be every 8 hours. The CTS requires the airborne radioactivity to be monitored every 12 hours. This change is essentially

consistent with Generic Letter 88-01, Supplement 1, which requires the Surveillance once per shift, not to exceed 12 hours. SR 3.0.2 will limit the extensions past 12 hours. This has been approved at Hatch and WNP-2. (ITS 3.4.5, DOC L.1)

- Changing the ADS Valve requirement in CTS 3.5.1.a and 3.5.1.b from seven to six. This is supported by an analysis already approved by the NRC and a similar change was approved at WNP-2. (ITS 3.5.1, DOC L.1)

- Modifying the requirement in CTS 4.5.1.e.2.b) to manually open the ADS valves to only require the ADS actuators to be cycled. This allowance has been approved at Grand Gulf. (ITS 3.5.1, DOC L.7)

- Changing the CTS 4.6.3.4 requirement that each excess flow check valve must "check flow" to requiring each EFCV to actuate to its isolation position on an actual or simulated instrument line break signal. This change was approved at WNP-2. (ITS 3.6.1.3, DOC L.9)

- Changing the CTS 3.6.5.3 Actions a.1 and b.1 requirements that purging and venting be suspended within 30 minutes and immediately, respectively, when SGT subsystem(s) are inoperable. The ITS will allow 1 hour to suspend the evolutions. (ITS 3.6.1.3, DOC L.19)

- Deleting the CTS 4.6.2.2.a, 4.6.2.3.a and 4.6.2.2.a requirements to verify position of "automatic" valves in the RHR Drywell Spray, RHR Suppression Cooling, and RHR Suppression Pool Spray Systems. There are no "automatic" valves in these systems; they are manually actuated systems. (ITS 3.6.1.6, DOC A.3; ITS 3.6.2.3, DOC A.3 and ITS 3.6.2.4, DOC A.3)

- Deleting the CTS 3.6.2.2 requirement that drywell spray and suppression pool spray flows be through the heat exchanger. (ITS 3.6.1.6, DOC L.1 and ITS 3.6.2.4, DOC L.1)

- Allowing a 7 day restoration time when both Control Room Envelope Filtration (CREF) subsystems are inoperable and a 30 day restoration time when both control room envelope AC subsystems are inoperable, provided the remaining components of the CREF System or Control Room Envelope AC System maintains CREF System or Control Room Envelope AC System safety function, as applicable. Currently, CTS 3.7.3 requires an LCO 3.0.3 entry (if in MODE 1, 2, or 3) or an immediate suspension of Core Alterations, handling irradiated fuel assemblies, and OPDRVs (if performing these evolutions). (ITS 3.7.2, DOC L.1 and ITS 3.7.3, DOC L.4)

- Changes to AC Sources – Operating, AC Sources – Shutdown and Diesel Fuel Oil, Lube Oil, and Starting Air Specifications include: a) more restrictive upper and lower voltage limits for various DG Surveillances; b) increasing the kW value for the single largest load SR for the Division 3 DG; c) relaxing the load range values for the 24 hour DG run to be consistent with RG 1.9 Ref. 3 (ISTS Bases says 100% for 22 hours and 110% for 2 hours is consistent with RG 1.9 Rev.3, but it isn't); d) increasing the DG start time in the event of a Loss of Voltage signal from 13 seconds to 13.12 seconds; e) adding a Note which exempts Surveillances pertaining to a DG starting on a LOCA signal and a LOCA/LOOP signal while in Modes 4 and 5 and during handling of irradiated fuel in the Secondary Containment when the ECCS subsystems are not

required to be Operable; and f) increasing the fuel oil storage tank limits for the Division 1 and 2 DGs as well as the 6 day limits for all three DGs. (ITS 3.8.1, DOCs M.7, M.10, M.12, M.13, M.14, L.9, and L.15; ITS 3.8.2, DOC L.4; and ITS 3.8.3, DOC M.2)

- Changes to the DC Sources – Operating Specification include: a) revision of the battery load profile to be consistent with the load profile specified in the USAR; and b) addition of an allowance to perform a modified performance discharge test every cycle in lieu of a service test. The CTS only allows a performance discharge test in lieu of a service test once every 60 months and the ISTS only allows a modified performance discharge test or a performance discharge test in lieu of a service test once every 60 months. (ITS 3.8.4, DOCs L.3 and L.4)

- Requiring that the inverters must be capable of being powered from an uninterruptible power supply (DC source). Currently, this is not required. This is a more restrictive change. (ITS 3.8.7, DOC M.1)

ATTACHMENT 4

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. NPF-69

DOCKET NO. 50-410

REQUEST FOR LICENSE AMENDMENTS

Justification of 24-Month Surveillance Requirement Frequencies

I. PURPOSE:

To accommodate a planned change to a 24-month fuel cycle for NMP2. NMPC is integrating the necessary changes to the NMP2 Technical Specifications Surveillance Requirements into the documents being used to convert to NUREG-1434, Standard Technical Specification for General Electric BWR 6. To facilitate the review of the 24-Month Fuel Cycle portion of this submittal, the following overview document is being provided to identify the scope of changes and the methodology used to justify the changes.

The proposed Technical Specification changes were evaluated in accordance with the guidance provided in NRC Generic Letter No. 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991.

II. SCOPE

The 24-Month Fuel Cycle portion of this submittal includes a justification, when the SR Frequency is being changed from 18 to 24 months, for those existing Current Technical Specification (CTS) Surveillance Requirements (SRs) that are being retained in the NMP2 Improved Technical Specifications (ITS) which have a NMP2 CTS Frequency of 18 months.

These changes have been divided into two categories. The categories are: 1) changes involving the Channel Calibration Frequency identified as "Instrumentation Changes" (identified in the ITS Conversion document discussion of changes as "LEs"), and 2) other changes identified as "Non-Instrumentation Changes" (identified in the ITS Conversion document discussion of changes as "LDs").

III. METHODOLOGY:

In Generic Letter 91-04, dated April 2, 1991, the Nuclear Regulatory Commission (NRC) provides generic guidance for evaluating going to a 24-Month Surveillance Test Interval for Technical Specification SRs. Generic Letter 91-04 specifies the steps for the evaluation needed to justify a 24-month surveillance interval. The following defines each step outlined by the NRC and provides a description of the

methodology used by NMPC to complete the evaluation for each specific Technical Specification SR line item.

A. **Non-Instrumentation (LDs):**

Generic Letter 91-04 identifies three steps to evaluate Non-Instrumentation:

STEP 1:

"...licensees should evaluate the effect on safety of the change in surveillance intervals to accommodate a 24-month fuel cycle."

NMPC EVALUATION

NMPC has evaluated each SR being changed. This evaluation provides a justification for each NMP2 CTS non-instrumentation SR which is being retained in NMP2 ITS. The evaluation is summarized in the discussion of change identified as "LDs". The following information provides a description of the purpose of surveillance testing and a general description of the methodology utilized.

The purpose of surveillance testing is to verify through the performance of the specified SRs that the tested Technical Specification Function/Feature will perform as assumed in the associated safety analysis or in accordance with the associated Function's design. By periodically testing the Technical Specification Function/Feature, the availability of the associated Function/Feature is confirmed. As such, with the extension, NMP's operating cycle and the associated extension of the refueling cycle surveillance test interval (frequency), a longer period of time will exist between performances of the surveillance test. If a failure resulting in the loss of a Safety Function occurs during the operating cycle and that failure would be detected only by the performance of the periodic Technical Specification SR, then the increase in the surveillance testing interval could potentially result in a decrease in the associated Function's availability and thus have a potential impact on safety.

NMPC evaluated each associated SR to demonstrate that the potential impact, if any, on availability is small as a result of the change to a 24-month Frequency. The evaluations were based on the fact that, in most cases, the Function/Feature is tested on a more frequent basis during the operating cycle (e.g., channel functional test, channel check) or is designed to be single failure proof, and therefore, is highly reliable. The review described below demonstrates that there are no failures that would invalidate this conclusion.

STEP 2:

"Licensees should confirm that historical maintenance and surveillance data do not invalidate this conclusion."

NMPC EVALUATION

NMPC has evaluated the surveillance test history of the affected SRs. This evaluation consisted of a review of the surveillance test results. Only SR test failures were evaluated because other plant activities such as Preventative

Maintenance Tasks or Surveillance Tests that are more frequent than 18 months are assumed to continue to detect failures associated with these tasks and tests. This review of surveillance test history validated the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24-Month Fuel Cycle.

STEP 3

"Licensees should confirm that the performance of surveillances at the bounding surveillance interval limit provided to accommodate a 24-month fuel cycle would not invalidate any assumption in the plant licensing basis."

NMPC EVALUATION

As part of the evaluation of each SR, NMPC reviewed the impact of these changes against assumptions in NMP2 licensing basis. In general, these changes have no impact on the plant licensing basis. However, in some cases, the change may require a change to certain commitments described in the NMP2 Updated Safety Analysis Report (USAR). If changes are required they will be evaluated in accordance with 10CFR50.59, as applicable, and the USAR changes implemented prior to exceeding 18 months plus 25% (i.e., 22.5 months) of operation.

B. **Instrumentation (Channel Calibrations (LEs)):**

Generic Letter 91-04 identifies seven steps for the evaluation of Instrumentation changes (LEs).

STEP 1

"Confirm that instrument drift as determined by as-found and as-left calibration data from surveillance and maintenance records has not, except on rare occasions, exceeded acceptable limits for a calibration interval."

NMPC EVALUATION

Niagara Mohawk Power Corporation, has evaluated the effect of longer calibration intervals on the TS instrumentation by performing a review of the surveillance test history for the instrumentation. In performing the drift study, an effort was made to retrieve recorded Channel Calibration data for associated instruments for the past several operating cycles. By obtaining recorded calibration data for the past several cycles of operation, a true representation of instrument drift can be determined. The failure history evaluation and drift study demonstrates that, except on rare occasions, instrument drift has not exceeded the acceptable limits for a calibration interval.

STEP 2

"Confirm that the values of drift for each instrument type (make, model, and range) and application have been determined with a high probability and a high degree of confidence. Provide a summary of the methodology and assumptions used to

determine the rate of instrument drift with time based upon historical plant calibration data."

NMPC EVALUATION

Niagara Mohawk Power Corporation has performed a drift evaluation, where necessary, using calibration data obtained from surveillance tests of affected Nine Mile Point 2 instruments by make, model number, and range.

General Electric Validation of Instrument Accuracy and Drift Values

General Electric Instrument Setpoint Methodology, NEDC-31336, provides a description of the calculation methodology used to validate instrument accuracy and drift values. A discussion of the purpose of the instrument, the trip logic initiated by the instrument, how the setpoints are calculated, the analysis that takes credit for the trip, confirmation method for demonstrating that plant performance of instrumentation is within the applicable design allowances, and the assumptions made in the setpoint determination or analysis is included in NEDC-31336. This document was submitted to the NRC, and approved.

Outlier Evaluation

The as-found and as-left data was taken from instrument calibration surveillance tests and was analyzed. The analysis included a strict preliminary review of the data points to determine if there were any data points which would not provide a true indication of instrument drift, a change in the input/output relationship over time. If adjustments or elimination of data points were made, these changes were placed into one of the following seven (7) categories: 1) "Data Transcription Errors," (Review identified typographical data entry error. Data point was adjusted to correct the error.), 2) "Technician Data Entry Error," (Review identified an obvious transposition error by the technician entering data. Data point was eliminated based on the data entry error), 3) "Equipment Replacement," (Review identified that a new instrument was installed. Data point "As-found" data was zeroed because this data would not be reflective of drift. Any repetitive instrument failures would be identified in the Surveillance Test History Review), 4) "Chronic Equipment Failure," (Review of the data indicated repetitive bad data points for a single instrument with excessive changes in the input/output relationship, while all other instruments in the same application did not exhibit the same characteristics. This instrument's data was eliminated based on a unique instrument problem. Any repetitive instrument failures would be identified in the Surveillance Test History review), 5) "Scaling or Setpoint Changes," (Changes in instrument scaling or setpoints can appear in the data set as a larger-than-actual drift point unless the change is detected during the data entry process), 6) "Measuring and Test Equipment (M&TE) Out of Calibration," (Review indicated that the instrument was calibrated with out of calibration M&TE. Data point was eliminated based on the fact that any recorded change could not be correlated to the performance of the instrument), 7) "Poor Calibration Techniques," (Review identified that poor calibration techniques were used. Data point was eliminated based on the fact that any recorded change could not be correlated to the performance of the instrument). All eliminated or adjusted data points were individually evaluated and independently verified to meet these categories.

Outlier Detection by the Critical Values for T-Test

ASTM Standard E 178-80 provides several methods for determining the presence of outliers. The recommended method for detection of a single outlier is by the T-Test. This test compares an individual measurement to the sample statistics and calculates a parameter, T, known as the extreme studentized deviate.

If the calculated value of T exceeds the critical value for the sample size and desired significance level, then the evaluated data point is identified as an outlier. The critical value of T increases as the sample size increases. The significance of this is that as the sample size grows, it is more likely that the sample is truly representative of the population.

Tolerance Interval

The tolerance interval is sometimes referred to as *tolerance limits* because the calculated interval establishes upper and lower bounds that contain the stated proportion of the population at the stated confidence level. Tolerance interval factors, k, were obtained from EPRI Guidelines for Instrument Calibration Extension/Reduction Programs, TR-103335, Table 4-1 or Table B-2. The appropriate tolerance factor depends on the sample size. As the sample size grows larger, the tolerance factor becomes smaller demonstrating a statistical confidence that the larger sample size is more representative of the total population.

Projected 30-month Drift Values

The Nine Mile Point Unit 2 drift evaluation process included a computer model by CRS Engineering, Inc. and is based on statistically determining projected drift values. The as-found and as-left data was taken and analyzed from instrument calibration surveillance tests. The projected drift values analyzed by the Instrument History Performance Analysis (IHPA) computer model were determined as follows:

The use of least square regression analysis has been a long used method of predicting trends in data sets in the engineering and scientific community. The objective is to derive an equation based on the data set such that when the independent variable, time for example, is entered into the equation a predicted dependent variable is obtained. A common method of ascertaining a "goodness of fit" is to examine the correlation coefficient. This is a useful tool in determining how well the data points correlate to the equation predicted by the data set. The correlation coefficient has a range of 0 to ± 1, where zero equates to no correlation and ± 1 equates to a perfect correlation.

Caution needs to be used when applying regression analysis to predict trends and the use of the correlation coefficient. Meaningful information is obtained if the independent variable covers a continuous range, (e.g., one month, two months, three months, etc.). However, the typical data observed in the systems monitored do not follow this consistent time interval. Therefore, to determine this correlation to time dependency it was decided to use a method to determine a predicted drift value with 95% probability based on the confidence level of the sample data to the regression line.

The IHPA computer model analyzes the sample data and provides a regression line based on the residuals starting at zero. The line is initially at zero since the As-Found/As-Left is always zero at time zero for each calibration. This approach is the best representation of equipment behavior and data.

The student t value is essentially replacing the K value in the typical Ks tolerance limits to determine the Confidence Level. This practice has been commonly used and has ben verified by other mathematical programs. Based on the above methodology, projecting out to a time interval of 30 months, the Instrument History Performance Analysis (IHPA) computer model can provide Projected Drift Values with 95% probability based on the confidence level of the sample data to the regression line.

In some cases, a different methodology was used to demonstrate that the drift was acceptable. These cases included instruments that were recently installed or where the Instrument History Performance Analysis computer model could not be applied. For each instrument where the IHPA program was not utilized to evaluate the drift data, a summary of the methodology is contained in the specific discussion of change.

All analyses were performed using Microsoft Excel 7.0, SYSTAT 7.01, and CRS Engineering, Inc. Instrument History Performance Analysis programs. Niagara Mohawk maintains configuration control of the analyses performed.

STEP 3

"Confirm that the magnitude of instrument drift has been determined with a high probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument type (make, model number, and range) and application that performs a safety function. Provide a list of the channels by TS section that identifies these instrument applications."

NMPC EVALUATION

In accordance with the methodology described in the previous section, the magnitude of instrument drift has been determined with a high degree of probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument make and model number. A review was performed to ensure that there were a valid number of data points in the data set used to perform the statistical analysis. In addition, the data sets were grouped relative to specific instrument applications (flow, pressure, and level), by range codes, and by plant applications. A list of the channels by TS section that identifies instrument applications is provided in the summary report. The associated instruments for each affected Nine Mile Point 2 ITS SR are listed in the corresponding discussion of the change.

STEP 4

"Confirm that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis. If this results in revised setpoints to accommodate larger drift errors, provide proposed TS changes to

update trip setpoints. If the drift errors result in revised safety analysis to support existing setpoints, provide a summary of the updated analysis conclusions to confirm that safety limits and safety analysis assumptions are not exceeded.

NMPC EVALUATION

The projected drift values were compared to the design allowances for the associated instruments as calculated in the associated setpoint analysis. Some of these analyses were completed during the performance of the 24 month drift evaluation, and therefore, data obtained from the drift study was utilized in the setpoint analysis. If the projected drift for an instrument fell outside the design allowances (but within TS values), the setpoint analysis was reviewed and/or revised as necessary to accommodate the increased projected drift values. If the projected drift value for an instrument could not be accommodated in the setpoint analysis, the surveillance test interval was either not changed or changed to a frequency which was supported by the projected drift. If an instrument was not in service long enough to establish a projected drift value, the surveillance interval was extended to a 24-month interval based on other, more frequent testing or justification obtained from qualitative analysis.

STEP 5

"Confirm that the projected instrument errors caused by drift are acceptable for control of plant parameters to effect a safe shutdown with the associated instrumentation."

NMPC EVALUATION

As discussed in the previous sections, the projected drift values were compared to design allowances for the instruments covered in the setpoint analysis used to support the Improved Technical Specification submittal. The setpoint analysis either supported the projected drift values or the SR frequency was not increased. In cases where qualitative analysis was utilized, the SR Frequency was increased based on that justification. Therefore, in no case was it necessary to change the existing safe shutdown analysis to accommodate a larger drift error without an approved engineering calculation/analysis.

STEP 6

"Confirm that all conditions and assumptions of the setpoint and safety analyses have been checked and are appropriately reflected in the acceptance criteria of plant surveillance procedures for Channel Checks, Channel Functional Tests, and Channel Calibrations."

NMPC EVALUATION

As part of the implementation of the Improved Technical Specification project, applicable surveillance test procedures are being reviewed and updated to incorporate the necessary changes. The reviews include acceptance criteria and any changes resulting from the reviews will be incorporated into the instrument surveillance procedures prior to the implementation of the Improved Technical

Specifications or prior to implementation of the 24 month operating cycle surveillance test frequency, as appropriate.

STEP 7

"Provide a summary description of the program for monitoring and assessing the effects of increased calibration surveillance intervals on instrument drift and its effect on safety."

NMPC EVALUATION

Instruments with Technical Specification calibration surveillance frequencies extended to 24 months will be monitored and as-found and as-left calibration data will be recorded for those calibration activities. Periodically or whenever as-found conditions are outside of the Allowable Value an evaluation will be performed to determine if the assumptions made to extend the calibration frequency are still valid and to evaluate the effect on plant safety.

IV. CONCLUSION

As described in the above discussion, NMPC has completed the evaluations necessary to justify a change in surveillance intervals needed to support a 24-Month Fuel Cycle, and NMPC has determined that these evaluations conform to guidance provided in Generic Letter 91-04. The specific evaluations for each NMP2 CTS SR being changed is contained in the associated ITS conversion discussion of change identified as "LD.x" and "LE.x". In addition, a No Significant Hazards Evaluation, in accordance with 10CFR50.92, has been performed for the changes annotated as "LDs" and LEs".