ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. DPR-63

DOCKET NO. 50-220

Proposed Changes to the Technical Specifications

Existing pages iiia, 241ii1, 241ii2 and 241ii3 will be replaced with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate the changes.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

3.6.12 REACTOR PROTECTION SYSTEM AND REACTOR TRIP SYSTEM POWER SUPPLY MONITORING

Applicability:

Applies to the operability of instrumentation that provides protection of the reactor protection system and reactor trip system.

Objective:

To assure the operability of the instrumentation monitoring the power to the reactor protection system and reactor trip system.

Specification:

a. Except as specified in specifications b and c below, two protective relay systems shall be operable for each power supply.

4.6.12 REACTOR PROTECTION SYSTEM AND REACTOR TRIP SYSTEM POWER SUPPLY MONITORING

Applicability:

Applies to the surveillance of instrumentation that provides protection of the reactor protection system and reactor trip system.

Objective:

To verify the operability of protection instrumentation monitoring the power to the reactor protection and reactor trip buses.

Specification:

a. At least once every six months
Demonstrate operability of the overvoltage, undervoltage and underfrequency protective instrumentation by performing an instrument channel test. This instrument channel test will consist of simulating abnormal power conditions by applying from a test source, an overvoltage signal, an undervoltage signal and an underfrequency signal to verify that the tripping logic up to but not including the output contactors functions properly.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.6.12 <u>REACTOR PROTECTION SYSTEM AND REACTOR TRIP SYSTEM POWER SUPPLY MONITORING</u> (cont'd) <u>Specification</u>: (cont'd) b. With one protective relaying system inoperable, restore the inoperable system to an operable status within 72 hours or remove the power supply from service. c. With both protective relaying systems inoperable, restore at least one to an operable status within 30 minutes or remove the power supply from service.	4.6.12 <u>REACTOR PROTECTION SYSTEM AND REACTOR TRIP SYSTEM POWER SUPPLY MONITORING</u> (cont'd) <u>Specification</u>: (cont'd) b. <u>At least once per refueling cycle</u> Demonstrate operability of the overvoltage, undervoltage and underfrequency protective instrumentation by performing an instrument channel test. This instrument channel test will consist of simulating abnormal power conditions by applying from a test source an overvoltage signal, an undervoltage signal and an underfrequency signal to verify that the tripping logic including the output contactors functions properly at least once. In addition, a sensor calibration will be performed to verify the following setpoints. i. Overvoltage $\leq$ 132 volts, $\leq$ 4 seconds ii. Undervoltage $\geq$ 108 volts, $\leq$ 4 seconds iii. Underfrequency $\geq$ 57 hertz, $\leq$ 2 seconds

BASES FOR 3.6.12 AND 4.6.12 REACTOR PROTECTION SYSTEM AND REACTOR TRIP SYSTEM POWER SUPPLY MONITORING

To eliminate the potential for undetectable single component failure which could adversely affect the operability of the reactor protection system and reactor trip system, protective relaying schemes are installed on Motor Generator Sets 131 and 141, Static Uninterruptible Power Supply Systems 162 and 172, and maintenance bus 130A. This provides for overvoltage, undervoltage and underfrequency protection.

ATTACHMENT B
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Supporting Information and Significant Hazards Consideration Analysis

Background

During restart from the last refueling outage, MG Sets 161, 171, 162 and 172 experienced bearing failures and were unreliable in speed and voltage control while in the DC drive mode. MG Set maintenance history reviews indicated a long-term trend of declining reliability. This history, coupled with the restrictive operating considerations described below, made it apparent that the plant was extremely vulnerable to an extended forced outage as the result of MG Set failure.

At the end of the next refueling outage, replacement of Motor Generator (MG) Sets 162 and 172 with four Static Uninterruptible Power Supplies (UPS's), two for each MG set, will be completed. Each UPS alone will be capable of providing power to one Reactor Protection System Power Panel. This will provide redundant power supplies for each Reactor Protection System channel.

Discussion

Each pair of UPS's will be powered from the existing Battery Board 11/12 DC fuse and existing Power Board 16/17 600 VAC breaker, which are now used for MG Sets 162 and 172. Disconnect switches will be added in-line with both AC and DC supplies for each UPS to provide isolation. The 120 VAC output of each UPS will be routed through additional disconnect switches for isolation, and then enter a mechanical make-before-break transfer switch. This transfer switch will select which UPS provides power. The output of each transfer switch will be connected to the RPS loads by separate fuses to the RPS Power Panel and the associated channel Remote Shutdown Panel.

Each UPS will contain a static switch that will automatically transfer the load to a bypass power source as a result of either UPS failure or a downstream system fault. The bypass power source will be obtained from the same 600 VAC supply breaker as the UPS. The power will be conditioned by a step-down transformer with no load taps that will permit manual compensation for large variations in source voltage.

Each UPS has internal alarm circuitry that will monitor several parameters for abnormal conditions. A latching alarm light displays each alarm condition at each UPS cabinet. A common annunciator for each UPS system channel will be displayed on the Main Control Panels in the Main Control Room. The existing RPS power protective relaying system will remain in service and will not be modified.

As described above, there will be two UPS units available for each RPS channel. During normal operation, one UPS in each channel will be energized and connected to the loads by the mechanical transfer switch. The other UPS will be shutdown, but be fully operable. The second UPS will be kept shutdown to conserve 125 VDC battery capacity should a Station Blackout (loss of all AC power) occur. Each UPS will normally be powered by 575 VAC from Power Board 16/17.

Should the 575 VAC input be interrupted or the UPS rectifier fail, 120 VAC output power will continue to be supplied by the inverter from the 125 VDC connection to the station batteries. Should the 125 VDC supply to the inverter be interrupted or the inverter fail when 575 VAC is available, the static switch internal to the UPS will transfer the 120 VAC loads to the bypass power supply step-down transformer. Only in the case of loss of the UPS DC or an inverter failure, and a simultaneous loss of the bypass AC power source as a result of transformer failure or loss of 575 VAC power from Power Board 16/17, will the RPS loads be de-energized. This sequence of multiple failures is highly unlikely since it would require the simultaneous failure of at least two components or power sources.

The only single component failures within the UPS System that could interrupt power to the RPS loads will be failure of the static switch or the mechanical transfer switch.

Should a sequence of events occur that causes interruption of the 120 VAC UPS output to the RPS loads, plant operators will be informed by receipt of both a UPS Failure Alarm annunciator and receipt of those alarms caused by loss of an RPS bus. Operators would then start the other UPS unit on the channel using the normal startup procedure, and switch the RPS load to the other UPS using the mechanical transfer switch.

There are no new failures introduced by the UPS's. A failure of the unit itself is equivalent to failure of the existing Motor Generator Set and is not a new failure source. The power boards and Reactor Protection System Power Panel are protected from failures of the UPS's by input and output breakers on the units themselves, and by breakers and fuses on connected power boards. These breakers and fuses will isolate the UPS's if an overcurrent condition exists.

The RPS loads are protected in three ways from the effects on an internal UPS System failure:

1) The UPS System monitors itself internally for the correctness of several parameters. If any of these parameters are outside their specified limits, a) an alarm is sent to the Control Room and b) if inverter output is affected, a signal is sent to the static transfer switch causing the loads to be transferred to the bypass source of power.

2) Internal UPS system faults will be isolated by:

   i) Overcurrent trips on the AC-input and DC-input breakers internal to the UPS.

   ii) An overcurrent trip on the main AC supply breaker on Power Board 16 or 17.

   iii) A fuse on the DC supply to the UPS internal DC bus from the 125 VDC Safety Related Batteries.

   iv) Power fuses on main buses inside the UPS.

   v) Fuses in the UPS Transfer Cabinet to each major load panel.

3) The existing Reactor Protection System Monitoring Relays will interrupt the power to the RPS loads whenever an under or over voltage or low frequency condition is sensed.

Should a large external ground or phase-to-phase short occur in the existing RPS distribution system, monitoring logic for the static switch will sense this condition and cause the power source to transfer to the bypass source. The bypass source is capable of providing sufficient fault current to clear the fault within one half cycle by the nearest upstream overcurrent protective device to the fault. This action serves to prevent disturbing the remaining RPS loads.

Calculations for this modification show that each UPS unit will draw 130 amps DC in order to supply the maximum measured steady-state load of 11.5 KVA at 0.7 power factor. The present FSAR and battery sizing calculation based on the Appendix R / Station Blackout scenario for Battery 11 uses 130 amps as the loading for the existing MG Set 162. Therefore, the static UPS System will cause no change in the Battery 11 calculation. The FSAR and existing battery sizing calculation for Battery 12 uses 122 amps as the loading for the existing MG Set 172. A revised calculation was completed for Battery 12 that includes the additional 8 amps. Consequently, Station Battery loading is evaluated to be satisfactory after installation of this modification when one UPS in each channel is energized for the duration of an Appendix R / Station Blackout event. However, continuously energizing the second UPS unit in each channel would draw an additional 60 amps from the battery in the unloaded

stand-by condition during a loss of all AC power. This additional current cannot be supplied within the battery capacity and margin requirements. Consequently, the second UPS unit in each channel will not be connected to the 125 VDC Switchboard except during the short time period required to switch between UPS units.

Diesel Generator loading increment allocated to the RPS MG Set in the Diesel Generator steady state loading calculation is 80 KVA for each MG Set. The maximum load the UPS System for each channel will draw is 55 KVA. This includes a one fully loaded UPS at 30 KVA and 0.7 Power Factor, and power losses for both the on-line and an off-line UPS unit. The power losses for the off-line UPS unit are included, even though this unit will normally be de-energized, to cover the occurrence of a LOOP/LOCA event during the infrequent periods when both UPS units are running in order to transfer RPS loads between them. This loading is evaluated to be satisfactory, since it is less than that allocated by the Diesel Generator loading calculation.

Conclusion

The static UPS units perform an identical function to the MG Sets and have equivalent failure modes. In addition, the existing power monitoring configuration is unchanged and calculations show that battery loadings are satisfactory. Also, the editorial change is to maintain consistency within the specification and will not alter function.

The replacement of the MG sets with station UPS units does not create nor increase the probability or consequences of accidents previously evaluated. This replacement will not create the possibility of a new or different accident nor reduce the margin of safety.

According to 10 CFR 50.91, at the time a licensee requests an amendment, it must provide to the Commission its analysis, using the standards in 10 CFR 50.92, concerning the issue of no significant hazards consideration. Therefore, in accordance with 10CFR50.91, the following analysis has been performed:

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Substitution of a Static Uninterruptible Power Supply for the MG Set is schematically a one-for-one substitution of a component with functionally equivalent characteristics. The failure of the Reactor Protection System power supply is not an initiating event for any Design Basis Accident.

Since the static UPS's provide the identical function as the MG Sets, these changes will not involve a significant increase in the probability or consequences of an accident previously evaluated. In addition, the editorial change is made only to maintain consistency. This also does not result in a significant increase in the probability or consequences of an accident previously evaluated.

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The Uninterruptible Power Supplies are functionally equivalent to the existing Motor Generator Sets, have equivalent failure modes, and protection is included against causing a failure of existing equipment. Moreover, the editorial change does not affect any function. Therefore, these proposed changes will not create the possibility of a new or different kind of accident from any previously evaluated.

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The Reactor Protection System Instrumentation performance will not be reduced since the current power protective relaying system will remain in service and not be modified. The safety related 125 VDC Battery System's margin of safety will not be affected, since calculations show battery loading to be satisfactory. In addition, the editorial change does not affect or alter system function. Therefore, this proposed change will not involve a significant reduction in a margin of safety.

Therefore, the proposed nomenclature changes do not adversely affect a Limiting Condition for Operation or involve a reduction in a margin of safety.