ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION

LICENSE NO. DPR-63

DOCKET NO. 50-220

Proposed Changes to the Technical Specifications

Existing pages 27, 28 and 34 will be replaced with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate the changes.

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LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
(2) Reactivity margin - stuck control rods Control rods which cannot be moved with control rod drive pressure shall be considered inoperable. Inoperable control rods shall be valved out of service, in such positions that Specification 3.1.1a(1) is met. In no case shall the number of non-fully inserted rods valved out of service be greater than six during power operation. If this specification is not met, the reactor shall be placed in the cold shutdown condition. If a partially or fully withdrawn control rod drive cannot be moved with drive or scram pressure the reactor shall be brought to a shutdown condition within 46 hours unless investigation demonstrates that the cause of the failure is not due to a failed control rod drive mechanism collet housing.	and all other operable rods fully inserted. (2) Reactivity margin - stuck control rods Each partially or fully withdrawn control rod shall be exercised at least once each week. This test shall be performed at least once per 24 hours in the event power operation is continuing with two or more inoperable control rods or in the event power operation is continuing with one fully or partially withdrawn rod which cannot be moved and for which control rod drive mechanism damage has not been ruled out. The surveillance need not be completed within 24 hours if the number of inoperable rods has been reduced to less than two and if it has been demonstrated that control rod drive mechanism collet housing failure is not the cause of an inmovable control rod.
b. Control Rod Withdrawal	b. Control Rod Withdrawal
(1) The control rod shall be coupled to its drive or completely inserted and valved out of service except as in 3.1.1.b.(1).a. When removing a control rod drive for inspection, this requirement does not apply as long as the reactor is in a shutdown or refueling condition. a. For control rod 22-31, for the remainder of cycle 10, withdrawal	(1) Except as provided in 4.1.1.b.(1)(c) below, the coupling integrity shall be verified for each withdrawn control rod by either: (a) Observing the drive does not go to the overtravel position, or (b) A discernable response of the

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
is permitted when $\geq$ 20% of rated thermal power with the condition that control rod 22-31 may not be withdrawn and left beyond notch position 46.	nuclear instrumentation.
	(c) When repositioning control rod 22-31 per specification 3.1.1.b, the control rod's position shall be verified by a discernible response of the nuclear instrumentation (LPRMs and/or TIP). If the control rod cannot be verified to follow the CRD out to its final position, then the control rod shall be completely inserted and valved out of service.
(2) The control rod drive housing support system shall be in place during power operation and when the reactor coolant system is pressurized above atmospheric pressure with fuel in the reactor vessel, unless all control rods are fully inserted and Specification 3.1.1a(1) is met.	(2) The control rod drive housing support system shall be inspected after reassembly.
(3)(a) Control rod withdrawal sequences shall be established so that maximum reactivity that could be added by dropout of any increment of any one control blade would not make the core more than 0.013 delta k supercritical.	(3)(a) To consider the rod worth minimizer operable, the following steps must be performed:
	(i) The control rod withdrawal sequence for the rod worth minimizer computer shall be verified as correct.
	(ii) The rod worth minimizer computer on-line diagnostic test shall be successfully completed.
	(iii) Proper annunciation of the select error of at least one out-of-sequence control rod in each fully inserted group shall be verified.

maximum contribution to shutdown reactivity. If it is valved out of service in a non-fully inserted position, that position is required to be consistent with the shutdown reactivity limitation stated in Specification 3.1.1a(1), which assures the core can be shut down at all times with control rods.

The allowable inoperable rod patterns will be determined using information obtained in the startup test program supplemented by calculations. During initial startup, the reactivity condition of the as-built core will be determined. Also, sub-critical patterns of widely separated withdrawn control rods will be observed in the control rod sequences being used. The observations, together with calculated strengths of the strongest control rods in these patterns will comprise a set of allowable separations of malfunctioning rods. During the fuel cycle, similar observations made during any cold shutdown can be used to update and/or increase the allowable patterns.

The number of rods permitted to be valved out of service could be many more than the six allowed by the specification, particularly late in the operating cycle; however, the occurrence of more than six could be indicative of a generic problem and the reactor will be shut down. Placing the reactor in the shutdown condition inserts the control rods and accomplishes the objective of the specifications on control rod operability. This operation is normally expected to be accomplished within ten hours. The weekly control rod exercise test serves as a periodic check against deterioration of the control rod system. Experience with this control rod drive system has indicated that weekly tests are adequate, and that rods which move by drive pressure will scram when required as the pressure applied is much higher.

Also if damage within, the control rod drive mechanism and in particular, cracks in drive internal housings, cannot be ruled out, then a generic problem affecting a number of drives cannot be ruled out. Circumferential cracks resulting from stress assisted intergranular corrosion have occurred in the collet housing of drives at several BWRs. This type of cracking could occur in a number of drives and if the cracks propagated until severance of the collet housing occurred, scram could be prevented in the affected rods. Limiting the period of operation with a potentially severed collet housing and requiring increased surveillance after detecting one stuck rod will assure that the reactor will not be operated with a large number of rods with failed collet housings.

b. Control Rod Withdrawal

(1) Control rod dropout accidents as discussed in Appendix E* can lead to significant core damage. If coupling integrity is maintained, the possibility of a rod dropout accident is eliminated. The overtravel

*FSAR

position feature provides a positive check as only uncoupled drives may reach this position. Neutron instrumentation response to rod movement provides an indirect verification that the rod is coupled to its drive. Details of the control rod drive coupling are given in Section IV.B.6.1.*

Operation with a potentially uncoupled CRD 22-31 is acceptable for the remainder of Cycle 10. The compensatory provisions in Specification 3.1.1.b.(1).a will assure that reactivity margins are maintained and that the CRDA analysis in the FSAR is not affected. Below 20% of rated thermal power, operation of CRD 22-31 will continue to comply with Specification 3.1.1.b(1) for uncoupled rods.

ATTACHMENT B

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SUPPORTING INFORMATION AND NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

Discussion

During the present maintenance outage, Control Rod Drive (CRD) 22-31 could not be uncoupled from its control rod. Following several attempts to move the CRD to position "48", it was noted that CRD 22-31 exhibited characteristics common to those indicative of an uncoupling rod installed in the wrong hole in the CRD spud. These characteristics are: a) not achieving position "48" at times, and b) intermittent uncoupling (inadvertently going into overtravel).

Since the only direct method of verifying coupling of the control rod drive to the control rod is to initiate a withdraw signal from position "48" (fully withdrawn) and verify that the CRD does not go to the overtravel position, the difficulties encountered in withdrawal of CRD 22-31 preclude absolute confirmation that a proper coupling exists. Under such circumstances, T.S. 3.1.1.b.(1) requires that control rod 22-31 be completely inserted and valved out of service. To prevent flux tilting in the core, insertion of CRD 22-31 could necessitate full insertion of three additional symmetric control rods.

This in turn would result in a reduction of two to five weeks of full power operation representing a significant adverse economic impact. Moreover, since the normal means for drive uncoupling have been unsuccessful, a decision to remove and repair the CRD at the present time would necessitate removal of the reactor vessel head and defueling to permit control rod uncoupling from above the core. This option would unnecessarily delay plant startup and power operation thereby also representing a significant adverse economic impact. To permit operation of CRD 22-31 for the remainder of Cycle 10, with the control rod potentially uncoupled, a change to T.S. 3.1.1 is required.

Proposed Technical Specification Changes

Niagara Mohawk Power Corporation is seeking a Technical Specification change to T.S. 3.1.1/4.1.1 and associated Bases that would allow operation of potentially uncoupled Control Rod Drive (CRD) 22-31 for the remainder of Cycle 10.

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. According to 10 CFR 50.92(c), a proposed amendment to an operating license involves no significant hazards considerations if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

Niagara Mohawk has evaluated this proposed amendment pursuant to 10 CFR 50.91 and has determined that it involves no significant hazards considerations.

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.

The only accident evaluated in the Safety Analysis Report (SAR) which could be impacted by the withdrawal of potentially uncoupled control rod 22-31, is the Control Rod Drop Accident (CRDA). For the CRDA, the faulty control rod is assumed uncoupled from the CRD, that it sticks in an inserted position, that it does not follow the CRD during withdrawal, and then becomes unstuck and drops to the position of the withdrawn CRD. The other control rods and CRDs are assumed to operate properly and remain coupled for the duration of the accident. For control rod 22-31, because its coupling with the control rod drive cannot be confirmed, it must be assumed that they are uncoupled and could therefore potentially affect the CRDA analysis conclusions unless adequate restrictions and compensatory provisions are instituted to preclude such a possibility.

Above 20% of rated thermal power, a Niagara Mohawk calculation concludes that the consequences of a CRDA are negligible and no constraints on control rod sequences are required. Therefore, pursuant to Niagara Mohawk's calculation, the proposed amendment requires control rod 22-31 to remain inserted and not be withdrawn whenever rated thermal power is below 20%. When at greater than 20% rated thermal power, control rod 22-31 may be withdrawn up to position 46 with the requirement that its position be verified by neutron instrumentation (LPRM or TIP) response as the control rod is withdrawn. Although the current overtravel test data and friction test data indicates that control rod 22-31 is coupled, the adequacy of its coupling cannot be ascertained. The restriction on operation of CRD 22-31 to above position 46 provides additional conservatism that an inadvertent uncoupling by the postulated mechanism whereby the uncoupling rod is installed in the wrong hole in the CRD spud, does not occur. The existing Technical Specifications prohibit continued operation with any other uncoupled rod withdrawn. During the withdrawal of control rod 22-31 above 20% rated thermal power, neutron instrumentation enables monitoring of the neutron flux in the vicinity of the control rod thereby verifying that the control rod blade tracks with the drive movement. This ensures that the rod is not sticking and separated from the CRD. If such verification cannot be accomplished, the proposed amendment requires that control rod 22-31 be fully inserted and valved out of service.

The compensatory actions of the proposed amendment assuring that the position of the affected control rod 22-31 corresponds to the position of CRD 22-31, in conjunction with the proposed requirement for full insertion of CRD 22-31 when below 20% rated thermal power results in the probability and/or consequences of a CRDA not being increased by the proposed changes.

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 possibility of an accident of a different type than previously evaluated has not been created by the proposed amendment. The most severe consequence of an improperly coupled control rod is the CRDA, and as was shown above, the CRDA analysis conclusions are unaffected by the proposed changes. The Niagara Mohawk calculation previously referenced addresses the possibility of equipment damage from scram loadings. Mechanism damage could occur during the deceleration phase of the scram stroke. If the rod were indeed uncoupled, it would continue to move upward and the velocity limiter would strike the bottom of the fuel support casting. However, analysis shows that although damage might occur to the velocity limiter or, upon rebound, to the spud and the lock plug, there is insufficient energy to dislodge the fuel support and fuel. Furthermore, the Niagara Mohawk calculation of possible deformation within the coupling assembly does not indicate any adverse scram performance for the rod. The Niagara Mohawk calculation concludes that the scram and insertion performance are not degraded nor are other reactivity control functions adversely affected. In fact, since the rod will be operated at a slightly inserted position for full withdrawal, it should have slightly better scram reactivity insertion characteristics.

With the proposed Technical Specification changes, it is therefore reasonable to conclude that operation with control rod 22-31 potentially uncoupled will not lead to any condition adverse to reactor safety and will therefore not create the possibility of a new or different kind of accident from any accident 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 proposed amendment does not involve a significant reduction in the margin of safety as the limiting event associated with an uncoupled control rod is the CRDA and all fuel limits stipulated in that analysis will be met when the compensatory measures included in the Technical Specification changes are implemented.

Therefore, based on the above evaluation, Niagara Mohawk has concluded that these changes do not involve significant hazards consideration.