ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
DOCKET NO. 50-220

Proposed Changes to Technical Specifications

Replace existing pages iv, 55, 59, 164, 165, 168, 170, 171, 174 and 246 with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate changes to the text. Also, pages 341a, 341b, and 341c have been added.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
d. If Specifications a, b and c are not met, a normal orderly shutdown shall be initiated within one hour and the reactor shall be in the cold shutdown condition within ten hours.	d. Core spray header ΔP instrumentation check — Once/day calibrate — Once/3 months test — Once/3 months
e. During reactor operation, except during core spray system surveillance testing, core spray isolation valves 40-02 and 40-12 shall be in the open position and the associated valve motor starter circuit breakers for these valves shall be locked in the off position. In addition, redundant valve position indication shall be available in the control room.	e. <u>Surveillance with Inoperable Components</u> When a component becomes inoperable its redundant component or system shall be verified to be operable immediately and daily thereafter.
f. Whenever irradiated fuel is in the reactor vessel and the reactor coolant temperature is less than or equal to 212°F, two core spray subsystems shall be operable except as specified in g and h below. If in Special Test Exception 3.7.2, one subsystem shall be operable in each system.	f. With a core spray subsystem suction from the CST, CST level shall be checked once per day.
g. If one of the above required subsystems becomes inoperable, restore at least two subsystems to an operable status within 4 hours or suspend all operations that have a potential for draining the reactor vessel. In addition, if in Special Test Exception 3.7.2, immediately abort system leakage or hydrostatic testing and scram time testing activities and reduce average reactor coolant temperature to ≤212°F within 10 hours.	g. At least once per month when the reactor coolant temperature is greater than 212°F, verify that the piping system between valves 40-03, 13 and 40-01, 09, 10, 11 is filled with water.

Based on the limited time involved in performance of the concurrent refueling maintenance tasks, procedural controls to minimize the potential and duration of leakage and available coolant makeup (CST) provides adequate protection against drainage of the vessel while the suppression chamber is drained.

Specification 3.1.4e establishes provisions to eliminate a potential single failure mode of core spray isolation valves 40-02 and 40-12. These provisions are necessary to ensure that the core spray system safety function is single failure proof. During system testing, when the isolation valve(s) are required to be in the closed condition, automatic opening signals to the valve(s) are operable if the core spray system safety function is required.

In the cold shutdown and refuel conditions, the potential for a LOCA due to a line break is much less than during operation. In addition, the potential consequences of the LOCA on the fuel and containment is less due to the lower reactor coolant temperature and pressures. Therefore, one subsystem of a core spray system is sufficient to provide adequate cooling for the fuel during the cold shutdown or refueling conditions. Therefore, requiring two core spray subsystems to be operable in the cold shutdown and refuel conditions provides sufficient redundancy. One subsystem in each system is required to be operable to provide sparger redundancy while in Special Test Exception 3.7.2.

3.4.0 REACTOR BUILDING

APPLICABILITY

Applies to the operating status of the reactor building.

OBJECTIVE

To assure the integrity of the reactor building.

SPECIFICATION

Reactor building integrity must be in effect in the refueling, hot shutdown and power operating conditions and also whenever irradiated fuel or the irradiated fuel cask is being handled in the reactor building.

LIMITING CONDITION FOR OPERATION

3.4.1 LEAKAGE RATE

Applicability:

Applies to the leakage rate of the secondary containment.

Objective:

To specify the requirements necessary to limit exfiltration of fission products released to the secondary containment as a result of an accident.

Specification:

Whenever the reactor is in the refueling, hot shutdown, or power operating condition, the reactor building leakage rate as determined by Specification 4.4.1 shall not exceed 1600 cfm. If this cannot be met after a routine surveillance check, then the actions listed below shall be taken:

a. Suspend immediately irradiated fuel handling, fuel pool and reactor cavity activities, and irradiated fuel cask handling operations in the reactor building.

b. Restore the reactor building leakage rates to within specified limits within 4 hours or initiate normal orderly shutdown and be in a cold shutdown condition within 10 hours.

SURVEILLANCE REQUIREMENT

4.4.1 LEAKAGE RATE

Applicability:

Applies to the periodic testing requirements of the secondary containment leakage rate.

Objective:

To assure the capability of the secondary containment to maintain leakage within allowable limits.

Specification:

Once during each operating cycle - isolate the reactor building and start emergency ventilation system fan to demonstrate negative pressure in the building relative to external static pressure. The fan flow rate shall be varied so that the building internal differential pressure is at least as negative as that on Figure 3.4.1 for the wind speed at which the test is conducted. The fan flow rate represents the reactor building leakage referenced to zero mph with building internal pressure at least 0.25 inch of water less than atmospheric pressure. The test shall be done at wind speeds less than 20 miles per hour.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

3.4.2 REACTOR BUILDING INTEGRITY - ISOLATION VALVES

Applicability:

Applies to the operational status of the reactor building isolation valves.

Objective:

To assure that fission products released to the secondary containment are discharged to the environment in a controlled manner using the emergency ventilation system.

Specification:

a. The normal Ventilation System isolation valves shall be operable whenever the reactor is in the refueling, hot shutdown, or power operating conditions, and whenever irradiated fuel or the irradiated fuel cask is being handled in the reactor building.

b. If Specification 3.4.2a is not met, the reactor shall be in the cold shutdown condition within ten hours and handling of irradiated fuel cask shall cease.

4.4.2 REACTOR BUILDING INTEGRITY - ISOLATION VALVES

Applicability:

Applies to the periodic testing requirements of the reactor building isolation valves.

Objective:

To assure the operability of the reactor building isolation valves.

Specification:

At least once per operating cycle, automatic initiation of valves shall be checked.

LIMITING CONDITION FOR OPERATION

3.4.3 ACCESS CONTROL

Applicability:

Applies to the access control to the reactor building.

Objective:

To specify the requirements necessary to assure the integrity of the secondary containment system.

Specification:

a. Whenever the reactor is in the hot shutdown or power operating condition, or when irradiated fuel is being handled in the reactor building, or during core alterations, or during irradiated fuel cask handling operations in the reactor building, the following conditions will be met:

   1. Only one door in each of the double-doored access ways shall be opened at one time.

   2. Only one door or closeup of the railroad bay shall be opened at one time.

   3. The core spray and containment spray pump compartments' doors shall be closed at all times except during passage in order to consider the core spray system and the containment spray system operable.

SURVEILLANCE REQUIREMENT

4.4.3 ACCESS CONTROL

Applicability:

Applies to the periodic checking of the condition of portions of the reactor building.

Objective:

To assure that pump compartments are properly closed at all times and to assure the integrity of the secondary containment system by verifying that reactor building access doors are closed, as required by Specifications 3.4.3.a.1 and 3.4.3.a.2.

Specification:

a. The core and containment spray pump compartments shall be checked once per week and after each entry.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
b. If these conditions cannot be met, then the actions listed below shall be taken: 1. If in the power operating condition, restore reactor building integrity within 4 hours or be in at least the hot shutdown condition within the next 12 hours and in the cold shutdown condition within the following 24 hours. OR If in the hot shutdown condition, restore reactor building integrity within 4 hours or be in cold shutdown within the following 24 hours. 2. Suspend any of the following activities: a. core alterations, b. Handling of irradiated fuel in the reactor building, c. irradiated fuel cask handling operations in the reactor building.	b. Verify at least once per 31 days that: 1. At least one door in each access to the secondary containment is closed. 2. At least one door or closeup of the railroad bay is closed.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
c. The results of laboratory carbon sample analysis shall show ≥90% radioactive methyl iodide removal when tested in accordance with ANSI N.510-1980 at 80°C and 95% R.H.	b. The tests and sample analysis of Specification 3.4.4b, c and d shall be performed at least once per operating cycle or once every 24 months, or after 720 hours of system operation, whichever occurs first or following significant painting, fire or chemical release in any ventilation zone communicating with the system.
d. Fans shall be shown to operate within ±10% design flow.	c. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
e. During reactor operation, including hot shutdown, from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other emergency ventilation circuit shall be operable. During refueling, from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, fuel handling is permissible during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other emergency ventilation circuit shall be operable. Fuel handling may continue beyond seven days provided the operable emergency ventilation circuit is in operation.	d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing. e. Each circuit shall be operated with the inlet heater on at least 10 hours every month.
f. If these conditions cannot be met, within 36 hours, the reactor shall be placed in a condition for which the emergency ventilation system is not required.	f. Test sealing of gaskets for housing doors downstream of the HEPA filters and charcoal adsorbers shall be performed at and in conformance with each test performed for compliance with Specification 4.4.4b and Specification 3.4.4b.

TABLE 3.6.2l

CONTROL ROOM AIR TREATMENT SYSTEM INITIATION

Limiting Condition for Operation

	Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable				
					Shutdown	Refuel	Startup	Run	
(1)	High Radiation Ventilation Intake	1	1	≤1000 CPM	x[a]	x	x	x	l

(a) Applies to hot shutdown conditions only. l

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7.2 SPECIAL TEST EXCEPTION - SYSTEM LEAKAGE AND HYDROSTATIC TESTING	4.7.2 SPECIAL TEST EXCEPTION - SYSTEM LEAKAGE AND HYDROSTATIC TESTING
Applicability:	Applicability:
Applies to performance of the system leakage or hydrostatic test and scram time testing in the cold shutdown condition.	Applies to testing requirements for specifications listed in 3.7.2.a.
Objective:	Objective:
To allow the reactor to be considered in cold shutdown (reactor coolant temperature below 212°F) when the actual reactor coolant temperature is greater than 212°F (hot shutdown) but less than 275°F while performing a system leakage or hydrostatic testing and scram time testing.	To verify operability of systems listed in 3.7.2.a are met.
Specification:	Specification:
a. When conducting system leakage or hydrostatic testing, the following hot shutdown specifications will be met: 1) LCO 3.4.1, Leakage Rate 2) LCO 3.4.2.a, Reactor Building Integrity - Isolation Valves 3) LCO 3.4.3.a, Access Control 4) LCO 3.4.4.a, Emergency Ventilation System Includes: LCO 3.6.2.a.(10), Table 3.6.2j, Emergency Ventilation Initiation	Verify the applicable surveillances for the requirements of specifications listed in 3.7.2.a are met.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
5) LCO 3.4.5.a, Control Room Air Treatment System Includes: LCO 3.6.2.a.(12), Table 3.6.21, Control Room Air Treatment System Initiation. b. When conducting scram time testing in conjunction with system leakage or hydrostatic testing, specification 3.7.1, Special Test Exception - Shutdown Margin Demonstrations, shall be met. c. The drywell and the pressure suppression chamber are intact with at least one door in each personnel air-lock closed. d. With the requirements of specification 3.7.2.a, 3.7.2.b, or 3.7.2.c not satisfied, immediately abort system leakage or hydrostatic testing and scram time testing activities and reduce the average reactor coolant temperature to ≤212°F within 10 hours.	

This special test exception allows the reactor coolant temperature to be considered less than 212°F (i.e., cold shutdown) when the reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing reactor vessel system leakage or hydrostatic testing and scram time testing. This allows operational flexibility since temperatures may exceed 212°F during the test and can drift higher since decay and mechanical heat do not allow for exact control. Not all Limiting Conditions of Operation (LCOs) applicable to operation at coolant temperatures > 212°F, e.g. Primary Containment and Containment Spray, apply during this Special Test Exception. Additionally, because reactor vessel fluence increases over time, this testing will require greater coolant temperatures. The requirement for reactor building integrity, the conditions placed on the primary containment, and the cold shutdown requirements for other plant systems provides conservatism in the response of the unit to an operational event. Shutdown margins need only be demonstrated when performing scram time testing in conjunction with system leakage or hydrostatic testing (i.e., shutdown margins need not be demonstrated when performing a pressure test only). This special test exception is to be used when low decay heat values are present (e.g., such as following an outage) and reactor coolant activity levels are within the limits specified in Specification 3.2.4.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
DOCKET NO. 50-220

Marked Up Copy of Technical Specifications

LIMITING CONDITION FOR OPERATION

d. If Specifications a, b and c are not met, a normal orderly shutdown shall be initiated within one hour and the reactor shall be in the cold shutdown condition within ten hours.

e. During reactor operation, except during core spray system surveillance testing, core spray isolation valves 40-02 and 40-12 shall be in the open position and the associated valve motor starter circuit breakers for these valves shall be locked in the off position. In addition, redundant valve position indication shall be available in the control room.

f. Whenever irradiated fuel is in the reactor vessel and the reactor coolant temperature is less than or equal to 212°F, two core spray subsystems shall be operable except as specified in g and h below. If in Special Test Exception 3.7.2, one subsystem shall be operable in each system

g. If one of the above required subsystems becomes inoperable, restore at least two subsystems to an operable status within 4 hours or suspend all operations that have a potential for draining the reactor vessel. In addition, if in Special Test Exception 3.7.2, immediately abort system leakage or hydrostatic testing and scram time testing activities and reduce average reactor coolant temperature to ≤ 212°F within 10 hours.

SURVEILLANCE REQUIREMENT

d. Core spray header ΔP instrumentation

check	Once/day
calibrate	Once/3 months
test	Once/3 months

e. <u>Surveillance with Inoperable Components</u>

When a component becomes inoperable its redundant component or system shall be verified to be operable immediately and daily thereafter.

f. With a core spray subsystem suction from the CST, CST level shall be checked once per day.

g. At least once per month when the reactor coolant temperature is greater than 212°F, verify that the piping system between valves 40-03, 13 and 40-01, 09, 10, 11 is filled with water.

Based on the limited time involved in performance of the concurrent refueling maintenance tasks, procedural controls to minimize the potential and duration of leakage and available coolant makeup (CST) provides adequate protection against drainage of the vessel while the suppression chamber is drained.

Specification 3.1.4e establishes provisions to eliminate a potential single failure mode of core spray isolation valves 40-02 and 40-12. These provisions are necessary to ensure that the core spray system safety function is single failure proof. During system testing, when the isolation valve(s) are required to be in the closed condition, automatic opening signals to the valve(s) are operable if the core spray system safety function is required.

In the cold shutdown and refuel conditions, the potential for a LOCA due to a line break is much less than during operation. In addition, the potential consequences of the LOCA on the fuel and containment is less due to the lower reactor coolant temperature and pressures. Therefore, one subsystem of a core spray system is sufficient to provide adequate cooling for the fuel during the cold shutdown or refueling conditions. Therefore, requiring two core spray subsystems to be operable in the cold shutdown and refuel conditions provides sufficient redundancy. One subsystem in each system is required to be operable to provide sparger redundancy while in Special Test Exception 3.7.2.

3.4.0 REACTOR BUILDING

APPLICABILITY

Applies to the operating status of the reactor building.

OBJECTIVE

To assure the integrity of the reactor building.

SPECIFICATION

Reactor building integrity must be in effect in the refueling, hot shutdown and power operating conditions and also whenever irradiated fuel or the irradiated fuel cask is being handled in the reactor building.

LIMITING CONDITION FOR OPERATION

3.4.1 LEAKAGE RATE

Applicability:

Applies to the leakage rate of the secondary containment.

Objective:

To specify the requirements necessary to limit exfiltration of fission products released to the secondary containment as a result of an accident.

Specification:

Whenever the reactor is in the refueling, hot shutdown or power operating condition, the reactor building leakage rate as determined by Specification 4.4.1 shall not exceed 1600 cfm. If this cannot be met after a routine surveillance check, then the actions listed below shall be taken:

a. Suspend immediately irradiated fuel handling, fuel pool and reactor cavity activities, and irradiated fuel cask handling operations in the reactor building.

b. Restore the reactor building leakage rates to within specified limits within 4 hours or initiate normal orderly shutdown and be in a cold shutdown condition within 10 hours.

SURVEILLANCE REQUIREMENT

4.4.1 LEAKAGE RATE

Applicability:

Applies to the periodic testing requirements of the secondary containment leakage rate.

Objective:

To assure the capability of the secondary containment to maintain leakage within allowable limits.

Specification:

Once during each operating cycle - isolate the reactor building and start emergency ventilation system fan to demonstrate negative pressure in the building relative to external static pressure. The fan flow rate shall be varied so that the building internal differential pressure is at least as negative as that on Figure 3.4.1 for the wind speed at which the test is conducted. The fan flow rate represents the reactor building leakage referenced to zero mph with building internal pressure at least 0.25 inch of water less than atmospheric pressure. The test shall be done at wind speeds less than 20 miles per hour.

LIMITING CONDITION FOR OPERATION

3.4.2 REACTOR BUILDING INTEGRITY - ISOLATION VALVES

Applicability:

Applies to the operational status of the reactor building isolation valves.

Objective:

To assure that fission products released to the secondary containment are discharged to the environment in a controlled manner using the emergency ventilation system.

Specification:

a. The normal Ventilation System isolation valves shall be operable whenever the reactor is in the refueling, hot shutdown or power operating conditions, and whenever irradiated fuel or the irradiated fuel cask is being handled in the reactor building.

b. If Specification 3.4.2a is not met, the reactor shall be in the cold shutdown condition within ten hours and handling of irradiated fuel cask shall cease.

SURVEILLANCE REQUIREMENT

4.4.2 REACTOR BUILDING INTEGRITY - ISOLATION VALVES

Applicability:

Applies to the periodic testing requirements of the reactor building isolation valves.

Objective:

To assure the operability of the reactor building isolation valves.

Specification:

At least once per operating cycle, automatic initiation of valves shall be checked.

LIMITING CONDITION FOR OPERATION

3.4.3 ACCESS CONTROL

Applicability:

Applies to the access control to the reactor building.

Objective:

To specify the requirements necessary to assure the integrity of the secondary containment system.

Specification:

a. Whenever the reactor is in the hot shutdown or power operating condition, or when irradiated fuel is being handled in the reactor building, or during core alterations, or during irradiated fuel cask handling operations in the reactor building, the following conditions will be met:

   1. Only one door in each of the double-doored access ways shall be opened at one time.

   2. Only one door or closeup of the railroad bay shall be opened at one time.

   3. The core spray and containment spray pump compartments' doors shall be closed at all times except during passage in order to consider the core spray system and the containment spray system operable.

SURVEILLANCE REQUIREMENT

4.4.3 ACCESS CONTROL

Applicability:

Applies to the periodic checking of the condition of portions of the reactor building.

Objective:

To assure that pump compartments are properly closed at all times and to assure the integrity of the secondary containment system by verifying that reactor building access doors are closed, as required by Specifications 3.4.3.a.1 and 3.4.3.a.2.

Specification:

a. The core and containment spray pump compartments shall be checked once per week and after each entry.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
b. If these conditions cannot be met, then the actions listed below shall be taken: 1. If in the power operating condition, restore reactor building integrity within 4 hours or be in at least the hot shutdown condition within the next 12 hours and in the cold shutdown condition within the following 24 hours. 2. Suspend any of the following activities: a. core alterations, b. Handling of irradiated fuel in the reactor building, c. irradiated fuel cask handling operations in the reactor building.	b. Verify at least once per 31 days that: 1. At least one door in each access to the secondary containment is closed. 2. At least one door or closeup of the railroad bay is closed. OR If in the hot shutdown condition, restore reactor building integrity within 4 hours or be in cold shutdown within the following 24 hours

LIMITING CONDITION FOR OPERATION

c. The results of laboratory carbon sample analysis shall show ≥90% radioactive methyl iodide removal when tested in accordance with ANSI N.510-1980 at 80°C and 95% R.H.

d. Fans shall be shown to operate within ±10% design flow.

e. During reactor operation, including hot shutdown from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other emergency ventilation circuit shall be operable.

During refueling, from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, fuel handling is permissible during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other emergency ventilation circuit shall be operable. Fuel handling may continue beyond seven days provided the operable emergency ventilation circuit is in operation.

f. If these conditions cannot be met, within 36 hours, the reactor shall be placed in a condition for which the emergency ventilation system is not required.

SURVEILLANCE REQUIREMENT

b. The tests and sample analysis of Specification 3.4.4b, c and d shall be performed at least once per operating cycle or once every 24 months, or after 720 hours of system operation, whichever occurs first or following significant painting, fire or chemical release in any ventilation zone communicating with the system.

c. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

e. Each circuit shall be operated with the inlet heater on at least 10 hours every month.

f. Test sealing of gaskets for housing doors downstream of the HEPA filters and charcoal adsorbers shall be performed at and in conformance with each test performed for compliance with Specification 4.4.4b and Specification 3.4.4b.

TABLE 3.6.2I

CONTROL ROOM AIR TREATMENT SYSTEM INITIATION

Limiting Condition for Operation

	Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable			
					Shutdown	Refuel	Startup	Run
(1)	High Radiation Ventilation Intake	1	1	≤1000 CPM	X(a)	x	x	x

(a) Applies to hot shutdown conditions only.

New Page

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7.2 SPECIAL TEST EXCEPTION - SYSTEM LEAKAGE AND HYDROSTATIC TESTING	4.7.2 SPECIAL TEST EXCEPTION - SYSTEM LEAKAGE AND HYDROSTATIC TESTING
Applicability:	Applicability:
Applies to performance of the system leakage or hydrostatic test and scram time testing in the cold shutdown condition.	Applies to testing requirements for specifications listed in 3.7.2.a.
Objective:	Objective:
To allow the reactor to be considered in cold shutdown (reactor coolant temperature below 212°F) when the actual reactor coolant temperature is greater than 212°F (hot shutdown) but less than 275°F while performing a system leakage or hydrostatic testing and scram time testing.	To verify operability of systems listed in 3.7.2.a are met.
Specification:	Specification:
a. When conducting system leakage or hydrostatic testing, the following hot shutdown specifications will be met: 1) LCO 3.4.1, Leakage Rate 2) LCO 3.4.2.a, Reactor Building Integrity - Isolation Valves 3) LCO 3.4.3.a, Access Control 4) LCO 3.4.4.a, Emergency Ventilation System Includes: LCO 3.6.2.a.(10), Table 3.6.2j, Emergency Ventilation Initiation	Verify the applicable surveillances for the requirements of specifications listed in 3.7.2.a are met.

New Page

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
5) LCO 3.4.5.a, Control Room Air Treatment System Includes: LCO 3.6.2.a.(12), Table 3.6.21, Control Room Air Treatment System Initiation. b. When conducting scram time testing in conjunction with system leakage or hydrostatic testing, specification 3.7.1, Special Test Exception - Shutdown Margin Demonstrations, shall be met. c. The drywell and the pressure suppression chamber are intact with at least one door in each personnel air-lock closed. d. With the requirements of specification 3.7.2.a, 3.7.2.b, or 3.7.2.c not satisfied, immediately abort system leakage or hydrostatic testing and scram time testing activities and reduce the average reactor coolant temperature to ≤212°F within 10 hours.	

New Page

This special test exception allows the reactor coolant temperature to be considered less than 212°F (i.e., cold shutdown) when the reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing reactor vessel system leakage or hydrostatic testing and scram time testing. This allows operational flexibility since temperatures may exceed 212°F during the test and can drift higher since decay and mechanical heat do not allow for exact control. Not all Limiting Conditions of Operation (LCOs) applicable to operation at coolant temperatures > 212°F, e.g. Primary Containment and Containment Spray, apply during this Special Test Exception. Additionally, because reactor vessel fluence increases over time, this testing will require greater coolant temperatures. The requirement for reactor building integrity, the conditions placed on the primary containment, and the cold shutdown requirements for other plant systems provides conservatism in the response of the unit to an operational event. Shutdown margins need only be demonstrated when performing scram time testing in conjunction with system leakage or hydrostatic testing (i.e., shutdown margins need not be demonstrated when performing a pressure test only). This special test exception is to be used when low decay heat values are present (e.g., such as following an outage) and reactor coolant activity levels are within the limits specified in Specification 3.2.4.

ATTACHMENT C

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
DOCKET NO. 50-220

Supporting Information and No Significant Hazards Consideration Analysis

INTRODUCTION

Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS), Specification 3.2.6/4.2.6, Inservice Inspection and Testing, requires the inservice inspection of Quality Group A, B, and C components in accordance with the requirements of Section XI of the ASME Boiler and Pressure Vessel Code. At NMP1, a hydrostatic or system leakage pressure test required by Section XI of the Code is performed prior to the reactor going critical after each refueling outage. Recirculation pump operation and a water solid Reactor Pressure Vessel (RPV) are used to achieve the necessary temperatures required for the test. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits delineated in TS 3.2.2, Minimum Reactor Vessel Temperature for Pressurization. These limits are conservatively calculated based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence. The current curves require that either pressure test (i.e., hydrostatic or system leakage) be conducted at temperatures approaching or greater than 230°F. With reactor coolant temperatures above 215°F and fuel in the reactor vessel (except while performing low power physics tests in certain conditions), TS 3.3.0, Primary Containment, requires that primary containment integrity be maintained. In addition, other hot shutdown (reactor coolant temperature above 212°F) TS requirements need to be met. For example, TS 3.1.4, Core Spray, requires both Core Spray Systems (i.e., all four subsystems) to be operable with reactor coolant above 212°F.

During a refueling outage, the requirement to establish and maintain primary containment integrity during the hydrostatic or system leakage test can add approximately eight hours to the outage. Also, requiring primary containment integrity, both Core Spray Systems to be operable or having to meet other hot shutdown TS requirements while performing a pressure test could potentially delay the test and the outage. Accordingly, Niagara Mohawk proposes the addition of Specification 3.7.2/4.7.2, "Special Test Exception - System Leakage and Hydrostatic Testing." Special Test Exception 3.7.2 will allow reactor coolant pressure tests and scram time testing to be performed with plant operation considered to be in cold shutdown (i.e., reactor coolant temperatures less than 212°F) with coolant temperatures greater than 212°F (i.e., hot shutdown) but less than 275°F except for those systems and conditions listed in TS 3.7.2.a. Specification 3.7.2.a lists those reactor building and control room systems which must meet their hot shutdown TS requirements. TS 3.7.2.c places certain conditions on the primary containment. In cold shutdown, primary containment integrity is not required and only two Core Spray subsystems (versus four subsystems) need be operable.

The NMP1 reactor building completely encloses the pressure suppression system. This structure provides secondary containment when the pressure suppression system is in service and the primary containment function when the pressure suppression system is open, as during refueling or other maintenance operations. The major safety function of the secondary containment is to minimize ground-level release of airborne radioactive materials by providing a controlled, elevated release of the building atmosphere through a filter system under accident conditions. The existing NMP1 TSs require that reactor building integrity be maintained in the refueling and power operating conditions. To be consistent with the Improved Technical Specifications (ITS), the proposed changes will add the requirement that those systems associated with reactor building integrity be operable in hot shutdown. Since TS 3.4.5, Control Room Air Treatment System, is required to be met when reactor building integrity is required, the control room air treatment system will also be required in hot shutdown.

DESCRIPTION OF CHANGES

The proposed amendment adds Specification 3.7.2/4.7.2, "Special Test Exception - System Leakage and Hydrostatic Testing". Appropriately, this amendment adds Specification 3.7.2/4.7.2 to the "Description" section of the TSs. Also, TSs for those systems required to maintain reactor building integrity will now be met during hot shutdown conditions.

EVALUATION

NMP1 hydrostatic or system leakage pressure tests conducted at the end of a refuel outage are performed water solid, all rods in (except during control rod scram time testing), and at low decay heat values. The heat being added to achieve the required temperatures during a pressure test is primarily from operation of the recirculation pumps. Accordingly, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above Specification 3.2.4, "Coolant Activity," limits is minimal. During scram time testing, the reactor mode switch is placed in the refuel position. In the refuel position, the refueling interlocks are in place (i.e., one-rod-out, etc.), which together with adequate shutdown margin will preclude an unacceptable reactivity excursion. Accordingly, performing scram time testing when reactor coolant temperatures are above 212°F while meeting cold shutdown requirements is acceptable.

As indicated in the ITS, in the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core spray cooling subsystems to operate. The capability of the two Core Spray subsystems, as required in cold shutdown, would provide adequate core cooling under this low decay heat load condition. One subsystem from each Core Spray System is required to maintain sparger redundancy. Small system leaks would be detected by leakage inspections before a significant inventory loss occurred. In accordance with the proposed changes, reactor building integrity will be maintained to handle any airborne radioactivity from leaks that could occur. This will assure that any leaks will be filtered through the Emergency Ventilation System, thereby limiting radiation releases to the environment.

A plant-specific engineering analysis was performed to determine the effect of a pipe break at a reactor coolant temperature of 275°F during a hydrostatic or system leakage test. A recirculation line break was used in the analysis since it was considered the most conservative pipe break without primary containment integrity. Although primary containment integrity will not be required, primary containment will be maintained in such a manner that no gross leakage paths will exist. Specifically, one door in each primary containment airlock will be closed. The results of this analysis indicated that the consequences of the recirculation line break during a pressure test are bounded by the USAR LOCA analysis. As previously discussed, two Core Spray subsystems would provide adequate core cooling under this low decay heat load condition. Also, although requiring reactor building integrity to be in place ensures that any release would be filtered through the emergency ventilation system and released via the stack, the analysis conservatively assumed an unfiltered ground level release. The doses calculated were well within 10 CFR 100 and 10 CFR 50, Appendix A, GDC 19 limits.

Accordingly, for the purpose of this test, the protection provided by two Core Spray subsystems, the conditions placed on primary containment and the reactor building integrity requirements required to be met by Specification 3.7.2, "Special Test Exception - System Leakage and Hydrostatic Testing," will ensure consequences are bounded by previously evaluated design basis accidents during normal hydrostatic or system leakage test conditions and during postulated accident conditions.

Although some variations were required, these proposed changes are consistent with the "Standard Technical Specifications," NUREG-1433, Section 3.10.1, Inservice Leak and Hydrostatic Testing Operation. Section 3.10.1 permits performing an inservice leakage or hydrostatic test while in "Mode 4" with reactor coolant temperatures above 200°F. NUREG-1433, Table 1.1-1, Modes, indicates that with the Mode Switch in Shutdown and reactor coolant temperatures above 200°F, the plant is normally in Mode 3. In Mode 3, primary containment integrity as well as a full complement of ECCS systems are required. NUREG-1433, Section 3.10.1 allows the plant to be considered in "Mode 4" with reactor coolant temperatures above 200°F. Mode 4 does not require that a full complement of ECCS systems be available or that primary containment integrity be maintained. If any requirements of Special Operations Section 3.10.1 are not met, the ITS Actions require that either the applicable condition of the affected LCO be entered immediately or that activities that could increase the average reactor coolant temperature or pressure be suspended and the average reactor coolant temperature reduced to cold shutdown temperatures in 24 hours. The proposed amendment requires that the test be aborted and the reactor brought to cold shutdown conditions in ten hours if the requirements of the Special Test Exception are not met. The ten-hour requirement to be in cold shutdown is conservative when compared to the ITS Action requirements (i.e., 24 hours) and consistent with loss of reactor building integrity requirements.

The existing TSs require that reactor building integrity be in effect in the refueling and power operating conditions and when irradiated fuel or an irradiated fuel cask is being handled in the reactor building. This amendment application also proposes that the TSs for those systems required to maintain reactor building integrity be met during hot shutdown conditions. This change is conservative in that applicability requirements are being added. The ITS requires secondary containment in Modes 1, 2, and 3 and, therefore, is consistent

with the proposed changes. Since TS 3.4.5, Control Room Air Treatment System, is required to be met when reactor building integrity is required, the control room air treatment system will also be required in hot shutdown.

CONCLUSION

The proposed addition of TS 3.7.2/4.7.2 would allow NMP1 to be considered in cold shutdown (reactor coolant temperatures below 212°F) when the actual reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing system leakage or hydrostatic testing and scram time testing. This would allow the performance of system leakage or hydrostatic testing without primary containment integrity, with two Core Spray subsystems operable, and with other operational flexibility. The changes will avoid establishing primary containment and will also preclude any delay in the pressure test (and the outage) due to an inoperable Core Spray subsystem or the inability to establish primary containment integrity.

The probability of a leak in the reactor coolant pressure boundary during a pressure test is not increased by not maintaining primary containment integrity or requiring two versus four Core Spray subsystems to be operable. Since a pressure test is performed water solid with all rods in (except for control rod scram testing), the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above TS limits is minimal. In addition, reactor building integrity will assure any airborne radiation resulting from leaks are treated. The RPV would rapidly depressurize in the event of a large primary system leak and the availability of two low pressure Core Spray subsystems would be more than adequate to provide core cooling. The plant-specific analysis indicates that the consequences of a recirculation line break during the test are bounded by previously evaluated accidents. The proposed change to add reactor building hot shutdown requirements is conservative in that applicability requirements are being added.

For these reasons, there is reasonable assurance that the changes that would be authorized by the proposed amendment can be implemented without endangering the health and safety of the public and is consistent with common defense and security.

NO SIGNIFICANT HAZARDS CONSIDERATION

10 CFR 50.91 requires that 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 10 CFR 50.91, 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.

The proposed changes are requested to allow NMP1 to be considered in cold shutdown (reactor coolant temperatures below 212°F) when the actual reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing system leakage or hydrostatic testing and scram time testing. This would allow system leakage or hydrostatic testing and scram time testing without primary containment integrity, with two (versus four) Core Spray subsystems operable, and with other operational flexibility. Removing the requirement to have primary containment integrity, changing the number of Core Spray subsystems required to be operable and revising other hot shutdown requirements to cold shutdown requirements does not result in an increase in the probability of any accident precursors nor does it alter the method of performing a pressure test. Also, the probability of a leak in the reactor coolant pressure boundary during system leakage or hydrostatic testing is not increased by the proposed changes. Therefore, the probability of an accident previously evaluated is not increased. The change to add hot shutdown requirements for those systems associated with reactor building integrity is conservative in that additional applicability requirements are being added.

Since a pressure test is performed water solid, all rods in (except during control rod scram testing), and at low decay heat values, the stored energy in the reactor core will be very low. Recirculation pump operation and a water solid RPV are typically used to achieve the necessary test temperatures. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above TS limits are minimal. Requiring reactor building integrity will ensure that any potential airborne radiation from leaks can be filtered through the Emergency Ventilation System, thereby limiting radiation releases to the environment. As indicated in the ITS, in the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure Core Spray subsystems to operate. The capability of two Core Spray subsystems (versus four subsystems) would provide adequate core cooling under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred. A plant-specific analysis indicates that the consequences of a recirculation line break during a test are bounded by previously evaluated accidents. The change to add hot shutdown requirements for those systems associated with reactor building integrity is conservative in that applicability requirements are being added. Therefore, this change will not involve a significant increase in the 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 proposed changes allow NMP1 to be considered in cold shutdown (reactor coolant temperatures below 212°F) when the actual reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing system leakage or hydrostatic testing and scram time testing. This would allow system leakage or hydrostatic testing and scram time testing to be performed without primary containment integrity, with two (versus

four) Core Spray subsystems operable, and with other operational flexibility. However, the method of performing the system leakage or hydrostatic test remains unchanged. Accordingly, the proposed changes will not introduce any new accident precursors and will not involve any physical alterations to plant configurations which could initiate a new or different kind of accident. The potential for a system leak remains unchanged since the reactor coolant system is designed for temperatures exceeding 500°F with similar pressures. The change to add hot shutdown requirements for those systems associated with reactor building integrity is conservative in that applicability requirements are being added. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

<u>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</u>.

The proposed changes allow NMP1 to be considered in cold shutdown (reactor coolant temperatures below 212°F) when the actual reactor coolant temperature is greater than 212°F (i.e., hot shutdown) but less than 275°F while performing system leakage or hydrostatic testing and scram time testing. This would allow system leakage or hydrostatic testing and scram time testing to be performed without primary containment integrity, with two (versus four) Core Spray subsystems operable, and with other operational flexibility. Since the reactor vessel head will be in place, systems operable to support reactor building integrity and two Core Spray subsystems operable, the proposed changes will not have any impact on any design bases accident or safety limit. This is because pressure testing is performed water solid, all rods in (except for control rod scram time testing), and at low decay heat values, where stored energy in the core is very low. Under these conditions the potential for failed fuel and subsequent increase in coolant activity would be minimal. As indicated in the ITS, the reactor pressure vessel would rapidly depressurize in the event of a large primary system leak and the low pressure Core Spray subsystems would be more than adequate to keep the core cooled. This would ensure that the fuel would not exceed the 2200°F peak clad temperature limit. Moreover, requiring reactor building integrity to be operable will assure that any airborne radiation is filtered through the Emergency Ventilation System. This will assure that doses remain within the limits of 10 CFR 100 guidelines and 10 CFR 50, Appendix A, GDC 19. Small system leaks would be detected by inspection before significant inventory loss has occurred. A plant-specific analysis indicated that a recirculation line break during the test was bounded by previously evaluated accidents. The change to add hot shutdown requirements for those systems associated with reactor building integrity is conservative in that applicability requirements are being added. Therefore, this special test exception will not involve a significant reduction in a margin of safety.