ATTACHMENT A

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

PROPOSED CHANGES TO THE TECHNICAL SPECIFICATIONS

Replace existing pages 21, 110, 199, 201, 206, 209, and 250 with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate changes to the text.

f-g. The low pressure isolation of the main steam lines at 850 psig was provided to give protection against fast reactor depressurization and the resulting rapid cooldown of the vessel. Advantage was taken of the scram feature which occurs when the main steam line isolation valves are closed, to provide for reactor shutdown so that high power operation at low reactor pressure does not occur, thus providing protection for the fuel cladding integrity safety limit. Operation of the reactor at pressures lower than 850 psig requires that the reactor mode switch be in the startup position where protection of the fuel cladding integrity safety limit is provided by the IRM high neutron flux scram. Thus, the combination of main steam line isolation on reactor low pressure and isolation valve closure scram assures the availability of neutron flux scram protection over the entire range of applicability of the fuel cladding integrity safety limit. In addition, the isolation valve closure scram anticipates the pressure and flux transients which occur during normal or inadvertent isolation valve closure. With the scrams set at ≤10% valve closure, there is no increase in neutron flux and peak pressure if the vessel dome is limited to 1141 psig. [8, 9, 10].

The operator will set the pressure trip at greater than or equal to 850 psig and the isolation valve stem position scram setting at less than or equal to 10% of valve stem position from full open. However, the actual pressure set point can be as much as 15.8 psi lower than the indicated 850 psig and the valve position set point can be as much as 2.5% of stem position greater. These allowable deviations are due to instrument error, operator setting error and drift with time.

In addition to the above mentioned Limiting Safety System Setting, the scram dump volume high level scram trip (LCO 3.6.2) serves as a secondary backup to the Limiting Safety System Setting chosen. This high level scram trip assures that scram capability will not be impaired because of insufficient scram dump volume to accommodate the water discharged from the control rod drive hydraulic system as a result of a reactor scram (Section X-C.2.10)*.

h. The generator load rejection scram is provided to anticipate the rapid increase in pressure and neutron flux resulting from fast closure of the turbine control valves due to the worst case transient of a load rejection and subsequent failure of the bypass. In fact, analysis [9,10] shows that heat flux does not increase from its initial value at all because of the fast action of the load rejection scram; thus, no significant change in MCPR occurs.

i. The turbine stop valve closure scram is provided for the same reasons as discussed in h above. With a scram setting of ≤10% valve closure, the resultant transients are nearly the same as for those described in h above; and, thus, adequate margin exists.

*UFSAR

LIMITING CONDITIONS FOR OPERATION
Table 3.2.7

REACTOR COOLANT SYSTEM ISOLATION VALVES

Line or System	No.of Valves (Each Line)	Location Relative to Primary Containment	Normal Position	Motive Power*	Maximum Oper. Time (Sec)	Action on Initiating Signal	Initiating Signal (All Valves have Remote Manual Backup)
Main Steam[1] (Two Lines)	1	Inside	Open	AC Motor	10	Close	Reactor water level low-low or low reactor pressure, (with mode switch in run) or main steam line high flow, or low-low-low condenser vacuum, or high temperature in the steam tunnel
	1	Outside	Open	Pn/DC Solenoid	10	Close	
Feedwater[1] (Two Lines)	1	Outside	Open	AC Motor	60	—	Remote Manual
	1	Outside	Open	Self Act. Ck.	—	—	—
Emergency Cooling							
Steam Leaving Reactor[1] (Two Lines)	1	Outside	Open	AC Motor	38	Close	High emergency cooling system flow
	1	Outside	Open	DC Motor	38	Close	
Condensate Return to Reactor[1] (Two Lines)	1	Inside	Closed	Self Act. Ck.	—	—	—
	1	Outside	Closed	Pn/DC Solenoid	60	Close	High emergency cooling system flow
					60	Open	Reactor water level low-low or high reactor pressure

TABLE 3.6.2a (cont'd)

INSTRUMENTATION THAT INITIATES SCRAM

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
(6)	Main-Steam-Line Isolation Valve Position	2	4(h)(o)	≤ 10 percent valve closure from full open		(c)	(c)	x
(7)	Deleted							
(8)	Shutdown Position of Reactor Mode Switch	2	1	---		(k)	x	x
(9)	Neutron Flux							
	(a) IRM							
	(i) Upscale	2	3(d)(o)	≤ 96 percent of full scale		(g)	(g)	(g)

TABLE 4.6.2a

INSTRUMENTATION THAT INITIATES SCRAM

Surveillance Requirement

	Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(1)	Manual Scram	None	Once per week	None
(2)	High Reactor Pressure	None	Once per 3 months[1]	Once per 3 months[1]
(3)	High Drywell Pressure	None	Once per 3 months[1]	Once per 3 months[1]
(4)	Low Reactor Water Level	Once/day	Once per 3 months[1]	Once per 3 months[1]
(5)	High Water Level Scram Discharge Volume	None	Once per 3 months	Once per 3 months
(6)	Main-Steam-Line Isolation Valve Position	None	Once per 3 months	Once per operating cycle
(7)	Deleted			

TABLE 3.6.2b (cont'd)

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

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
(4)	Deleted							
(5)	Low Reactor Pressure	2	2(f)	≥ 850 psig				x
(6)	Low-Low-Low Condenser Vacuum	2	2(f)	≥ 7 in. mercury vacuum			(a)	x
(7)	High Temperature Main Steam Line Tunnel	2	2(f)	≤ 200°F			x	x

TABLE 4.6.2b

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
PRIMARY COOLANT ISOLATION (Main Steam, Cleanup and Shutdown)			
(1) Low-Low Reactor Water Level	Once/day	Once per 3 months[d]	Once per 3 months[d]
(2) Manual	---	Once during each major refueling outage	---
MAIN-STEAM-LINE ISOLATION			
(3) High Steam Flow Main-Steam Line	Once/day	Once per 3 months[d]	Once per 3 months[d]
(4) Deleted			
(5) Low Reactor Pressure	Once/day	Once per 3 months[d]	Once per 3 months[d]

a. The set points included in the tables are those used in the transient analysis and the accident analysis. The high flow set point for the main steam line is 105 psi differential. This represents a flow of approximately 4.4×10^6 lb/hr. The high flow set point for the emergency cooling system supply line is ≤ 11.5 psi differential. This represents a flow of approximately 9.8×10^5 lb/hr at rated conditions.

The automatic initiation signals for the emergency cooling systems have to be sustained for more than 12 seconds to cause opening of the return valves. If the signals last for less than 12 seconds, the emergency cooling system operating will not be automatically initiated.

The high level in the scram discharge volume is provided to assure that there is still sufficient free volume in the discharge system to receive the control rod drives discharge. Following a scram, bypassing is permitted to allow draining of the discharge volume and resetting of the reactor protection system relays. Since all control rods are completely inserted following a scram and since the bypass of this particular scram initiates a control rod block, it is permissible to bypass this scram function. The scram trip associated with the shutdown position of the mode switch can be reset after 10 seconds.

The condenser low vacuum, low-low vacuum and the main steam line isolation valve position signals are bypassed in the startup and refuel positions of the reactor mode switch when the reactor pressure is less than 600 psig. These are bypassed to allow warmup of the main steam lines and a heat sink during startup.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
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SUPPORTING INFORMATION AND NO SIGNIFICANT HAZARDS CONSIDERATIONS ANALYSIS

INTRODUCTION

Niagara Mohawk Power Corporation requests herein to remove the Main Steam Line Radiation Monitor isolation of the main steam lines and automatic reactor shutdown features from the Nine Mile Point Unit 1 Technical Specifications. Eliminating the Main Steam Line Radiation Monitor isolation of the Main Steam Isolation Valves and the automatic reactor shutdown features from the plant will result in the reduced potential for unnecessary reactor shutdowns caused by spurious Main Steam Line Radiation Monitor actuation trips and will increase plant operational flexibility without compromising plant safety. This request is based on the BWR Owners' Group Licensing Topical Report NEDO-31400A, dated July 9, 1987; the USNRC's Safety Evaluation Report dated May 15, 1991, for that document; and the information provided in this amendment request. The Licensing Topical Report, NEDO-31400A, includes Nine Mile Point Unit 1 as a participating utility.

The NRC staff has concluded that removal of the Main Steam Line Radiation Monitor (MSLRM) trips that automatically shutdown the reactor and close the Main Steam Isolation Valves is acceptable and that Licensing Topical Report, NEDO-31400A may be referenced in support of an amendment request provided that:

- the applicant demonstrates that the assumptions with regard to input values (including power per assembly, χ/Q, and decay times) that are made in the generic analysis bound those for the plant,

- the applicant includes sufficient evidence (implemented or proposed operating procedures, or equivalent commitments) to provide reasonable assurance that increased significant levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational doses and environmental releases, and

- the applicant standardizes the MSLRM and offgas radiation monitor alarm setpoint at 1.5 times the nominal nitrogen-16 background dose rate at the monitor locations, and commits to promptly sample the reactor coolant to determine possible contamination levels in the plant reactor coolant and the need for additional corrective actions, if the MSLRM or offgas radiation monitors or both exceed their alarm setpoints.

DESCRIPTION OF PROPOSED TECHNICAL SPECIFICATION CHANGES

1. All references to the Main Steam Line Radiation Monitor automatic reactor shutdown features have been deleted from Tables 3.6.2a and 4.6.2a.

2. All references to the Main Steam Line Radiation Monitor isolation function of the main steam lines have been deleted from Tables 3.2.7, 3.6.2b and 4.6.2b.

3. The "Bases for 2.1.2 Fuel Cladding - Limiting Safety System Setting" have been amended to reflect the deletion of the Main Steam Line Radiation Monitor automatic reactor shutdown function and closure of the Main Steam Isolation Valves.

4. The "Bases for 3.6.2 and 4.6.2 Protective Instrumentation" have been amended to reflect the deletion of the Main Steam Line Radiation Monitor automatic reactor shutdown function and closure of the Main Steam Isolation Valves.

EVALUATION

The Main Steam Line Radiation Monitor consists of four redundant radiation detectors located on the outside of the main steam lines and external to the primary containment. The Main Steam Line Radiation Monitor was designed to provide an early indication of gross fuel failures. The original intention was to mitigate the release of the detected fuel failure by providing a scram signal to terminate the initiating event and a Main Steam Isolation Valve closure signal to assure containment of the release. However, no credit is taken for these signals in any design basis event for terminating the initiating event or assuring the radioactive release remains within accepted limits.

The only design basis accident in which either the Main Steam Line Radiation Monitor scram or Main Steam Isolation Valve isolation functions are mentioned is the control rod drop accident. To be consistent with Section 15.4.9 of the Standard Review Plan, all of the postulated radioactivity is assumed to be released to the condenser and turbine before the isolation occurs. Hence, the automatic isolation resulting from the Main Steam Line Radiation Monitors provides no benefit since the resultant dose consequence from the postulated control rod drop accident will remain unchanged. However, since the alarm function will be retained, upon a confirmed high radiation level in the main steam lines, an operator can initiate a manual closure of the Main Steam Isolation Valves. Additionally, upon a main steam line high radiation signal, the mechanical vacuum pumps will trip and isolate. The operability requirements for the Main Steam Line Radiation Monitor will be governed by the Limiting Condition for Operation for the mechanical vacuum pump isolation due to high radiation in the main steam line given in Table 3.6.2.h.

The proposed changes will eliminate the main steam line high radiation scram and main steam line isolation functions. Elimination of these trip functions offers the following benefits:

Reduction in scram frequency

The plant is vulnerable to unnecessary scrams caused by nitrogen-16 spikes or other spurious electrical signals that can trip this circuit. This is especially true when reactor scram instrumentation calibration is in progress since this work involves a half scram signal. Spurious signals affecting the remaining channel can result in a full scram signal with a resultant reactor trip. As noted in the topical report, eight industry scrams have been attributed to the Main Steam Line Radiation Monitor since 1980, representing 162 plant operating years through 1987. Unnecessary scrams present a plant transient that challenges safety functions. Further, as reported in the topical report, the reduction in scram frequency has

economical benefit in avoiding an unnecessary scram and the associated plant recovery lost time.

Maintaining the availability of the condenser as a heat sink

In addition to causing a reactor scram, the main steam line high radiation signal provides an isolation signal to the main steam isolation valves. Closure of these valves prevents use of the condenser as a heat sink to facilitate scram recovery. Unnecessary loss of the condenser challenges containment and can lead to emergency core cooling system actuations.

Increased operator control over radioactive releases

By eliminating the main steam line isolation function, it is possible to allow operators the option of permitting the release of activity via a controlled release path using the Offgas Treatment System. If the vessel is isolated, it is reasonable to assume that any activity trapped in the condenser could then leak directly to the atmosphere without further treatment.

Reliability Assessment

NEDO-31400A results indicate that removing the scram and main steam line isolation function will represent a reduction in transient initiating events which results in a 0.3% reduction in core damage frequency probability. The recently completed Nine Mile Point Unit 1 Individual Plant Examination was used as a comparison to the above NEDO-31400A results. The Nine Mile Point Unit 1 results yielded a 0.1% reduction in core damage frequency and a 0.3% reduction in early high radionuclide release frequency. These results compare favorably with the NEDO-31400A results and demonstrate a safety improvement.

The referenced topical report also evaluated the impact that the removal of these functions would have on reactivity control system failure frequency. The results were a negligible increase (1.4 x E-9 events per year), which is offset by the relatively large reduction in core damage frequency. Hence, the final result is a net improvement to safety.

To summarize, the most significant operational impact with the existing Main Steam Line Radiation Monitor trip functions is the unnecessary reactor scram and isolation of the main steam lines. Subjecting the reactor system to unnecessary vessel isolations diminishes plant reliability, complicates scram recovery and is contrary to the concept of maximizing plant safety. Maintaining the Steam Jet Air Ejectors operational (condenser unisolated) during an event permits continued use of the Offgas System to process radioactivity during transients. Thus, the operator maintains control over the pathway of a potential release.

The NRC staff concluded that the removal of Main Steam Line Radiation Monitor trips that automatically shutdown the reactor and close the Main Steam Isolation Valves is acceptable and that the Licensing Topical Report, NEDO-31400A, could be referenced in support of an appropriate licensee amendment request provided that:

The applicant demonstrates that the assumptions with regard to input values (including power per assembly, χ/Q, and decay times) that are made in the generic analysis bound those for the plant.

Table 1 of this attachment provides a comparison of key input parameters and Table 2 compares the dose assessment between the Nine Mile Point Unit 1 design basis and the NEDO-31400A analysis assumptions. The specific power level for Nine Mile Point Unit 1 is used to determine the source term. This factor is more than offset by the lower calculated power for the failed fuel rods. Other considerations also enter into the final two hour Exclusion Area Boundary dose, such as the atmospheric dispersion factor, χ/Q, which is approximately a factor of ten less than the NEDO-31400A values. The other Nine Mile Point Unit 1 parameters are the same or more conservative than the NEDO-31400A values. Tables 1 and 2 demonstrate that the generic analysis of the Licensing Topical Report is bounding for Nine Mile Point Unit 1.

The applicant includes sufficient evidence (implemented or proposed operating procedures, or equivalent commitments) to provide reasonable assurance that increased significant levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational doses and environmental releases.

Nine Mile Point Unit 1 has in place the Offsite Dose Calculation Manual, an ALARA (As Low As Is Reasonably Achievable) Program, a Radiation Protection Program, and an Environmental Program. Nine Mile Point Unit 1 ALARA, radiation protection, chemistry, operating, emergency operating procedures, and the Offsite Dose Calculation Manual will be revised as necessary to incorporate specific considerations to change isolation of the main steam lines from an automatic to a manual function. Thus, any significant increase in the levels of radioactivity in the main steam lines will continue to be promptly controlled to limit environmental releases and on-site occupational exposures.

The Main Steam Line Radiation Monitor alarm setpoint of 1.5 times the normal full power background will be used to initiate sampling and surveillance actions. Confirmation of elevated activity will cause administrative controls to be implemented that ensure offsite and onsite doses are maintained As Low As Is Reasonably Achievable. Manual action to close the main steam lines and shutdown the reactor will occur when all the evidence has indicated the need for isolation and shutdown. Also, procedures will require immediate notification of Radiation Protection and Chemistry upon annunciation in the Control Room of the high radiation alarm of the Main Steam Line Radiation Monitor or Offgas Radiation Monitor.

Further controls as governed by the Offsite Dose Calculation Manual will ultimately ensure that the Technical Specification limits will not be exceeded. Adherence to the Technical Specification limits provides assurance that doses to the public are maintained below regulatory limits.

The applicant standardizes the MSLRM and offgas radiation monitor alarm setpoint at 1.5 times the nominal nitrogen-16 background dose rate at the monitor locations, and commits to promptly sample the reactor coolant to determine possible contamination levels in the plant reactor coolant and the need for additional corrective actions, if the MSLRM or offgas radiation monitors or both exceed their alarm setpoints.

The Main Steam Line Radiation Monitor alarm setpoint will be set at 1.5 times the normal full power background at the monitor location. A valid alarm will trigger entry into the procedure which will require a reactor coolant sample to be obtained and analyzed.

The offgas radiation monitor alarm is set to satisfy Nine Mile Point Unit 1 Technical Specification 3.6.15.c., which is based on the Offsite Dose Calculation Manual. As stated in revision 12 of the Offsite Dose Calculation Manual, "The offgas monitor setpoint provides assurance that the total body exposure to an individual at the exclusion area boundary will not exceed a very small fraction of the limits of 10CFR Part 100 in the effluent if this effluent is inadvertently discharged directly to the environment without treatment (thereby implementing the requirements of General Design Criteria 60 and 64 of Appendix A to 10CFR Part 50). Additionally, this setpoint serves to limit buildup of fission product activity within the Station systems which would result if high fuel leakage were to be permitted over extended periods."

The offgas radiation monitor is a more sensitive monitor than the Main Steam Line Radiation Monitor because the nitrogen-16 source, dominating the radiation signal to the Main Steam Line Radiation Monitor, has decayed by the time the offgas radiation monitor can be affected by any increased levels of activity. Therefore, setting the offgas radiation monitor at 1.5 times the nitrogen-16 background dose rate is not reasonable since setting the monitor that low can lead to spurious activations of the alarm.

Nine Mile Point Unit 1's monitor configuration, as described in the Final Safety Analysis Report (Updated), detects the concentration of the offgas as it flows through the pipe. Thus, the detector is sensitive to fluctuations in condenser air inleakage, which can have an appreciable impact on the monitor readings especially at readings as low as 1.5 times the normal full power background. Therefore, Niagara Mohawk proposes to set the offgas radiation monitor alarm at five (5) times the normal full power background, which is still very conservative compared to the value allowed by Technical Specification 3.6.15.c.

Niagara Mohawk believes that an offgas radiation monitor alarm setting of five (5) times the normal full power background is extremely conservative and is low enough to ensure detection of even minor fuel performance changes. Furthermore, if the monitor alarms at this setpoint of five times the normal full power background, the offgas will immediately be sampled and analyzed, followed by an analysis of a reactor coolant sample.

CONCLUSIONS

Niagara Mohawk Power Corporation requests herein to remove the Main Steam Line Radiation Monitor isolation of the main steam lines and automatic reactor shutdown features from the Technical Specifications. Eliminating the Main Steam Line Radiation Monitor isolation of the Main Steam Isolation Valves and the automatic reactor shutdown features will result in the reduced potential for unnecessary reactor shutdowns caused by spurious Main Steam Line Radiation Monitor actuation trips and will increase plant operational flexibility. This request is based on the BWR Owners' Group Licensing Topical Report NEDO-31400A, dated July 9, 1987, and the USNRC's Safety Evaluation Report dated May 15, 1991, for that document.

The key input parameters and the dose assessment in the NEDO-31400A Licensing Topical Report have been compared with those of the Nine Mile Point Unit 1 design basis documents. The analysis in the Licensing Topical Report is bounding for Nine Mile Point Unit 1. Nine Mile Point Unit 1 has in place the Offsite Dose Calculation Manual, a Radiation Protection Program, an ALARA Program, and an Environmental Program. Nine Mile Point Unit 1 plant procedures and the Offsite Dose Calculation Manual will be revised as necessary to incorporate specific considerations to change the isolation of the main steam lines from an automatic to a manual function. Thus, any significant increase in the levels of radioactivity in the main steam lines will continue to be promptly controlled to limit environmental releases and on-site occupational exposures.

The Main Steam Line Radiation Monitor alarm setpoint will be 1.5 times the normal full power background at the monitor location. This alarm will trigger entry into a procedure which will require a reactor coolant sample to be obtained and analyzed. The offgas radiation monitor alarm will be set at five (5) times the normal full power background. If the monitor alarms at this setpoint of five (5) times the normal full power background, the offgas will immediately be sampled and analyzed, followed by an analysis of a reactor coolant sample.

The changes have been shown to have an insignificant impact on overall reactivity control failure frequency. This insignificant impact is, in turn, offset by the relatively large reduction in core damage frequency realized by the implementation of these changes. Thus, as stated in the topical report, the changes provide a net improvement in overall plant safety.

The proposed amendment will involve a change to reactor protection and isolation actuation systems circuitry that will remove the automatic reactor shutdown and main steam line isolation valve closure functions of the Main Steam Line Radiation Monitor. However, these changes will not affect the remaining scram, vessel isolation, or the Mechanical Vacuum Pump trip and isolation functions.

The monitors do not perform a prevention function for any kind of accident. The main steam line high radiation scram and main steam line isolation functions were originally intended to mitigate, not prevent, an existing accident scenario. However, the functions being removed do not contribute to avoidance or mitigation of any previously evaluated accidents since no credit is taken for these functions in any design basis event for terminating the initiating event or assuring the radioactive release remains within accepted limits. The existence of a Main Steam Line Radiation Monitor trip does not prevent the occurrence of a fuel failure event or any other type of event.

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 are consistent with common defense and security.

NO SIGNIFICANT HAZARDS CONSIDERATION

10CFR50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis using the standards in 10CFR50.92 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.

The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because the functions being removed do not contribute to avoidance of any previously evaluated accidents. Further, the changes have been shown to have an insignificant impact on overall reactivity control failure frequency. This insignificant impact is offset by the relatively large reduction in core damage frequency realized by the implementation of these changes. Hence, the probability or consequences of previously evaluated accidents are not significantly increased due to this change. To the contrary, as stated in the topical report, the changes provide a net improvement in overall plant safety.

The proposed amendment does not involve a physical or procedural change to any structure, component or system that significantly affects the probability or consequences of any accident or malfunction of equipment important to safety previously evaluated in the Final Safety Analysis Report (Updated). The proposed amendment will involve a change to reactor protection and isolation actuation systems circuitry that will remove the automatic reactor shutdown and Main Steam Line Isolation Valve closure functions of the Main Steam Line Radiation Monitor. However, the physical changes will not affect the remaining scram or vessel isolation functions.

As demonstrated in Tables 1 and 2 of this attachment, the methods, procedures and assumptions used to perform the generic analyses in NEDO-31400A are bounding for the Nine Mile Point Unit 1 with regard to input values. Niagara Mohawk has also provided in the evaluation reasonable assurance that significantly increased levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational and environmental exposures. The Main Steam Line Radiation Monitor alarm setpoints will be set at 1.5 times the normal full power background dose rate and should any monitor exceed its alarm setpoint, the reactor coolant will be sampled to determine activity levels and the possible need for additional corrective actions.

The offgas radiation monitor is a more sensitive monitor than the Main Steam Line Radiation Monitor because the nitrogen-16 source, dominating the radiation signal to the Main Steam Line Radiation Monitor, has decayed by the time the radiation monitor can be affected by any increased levels of activity. Therefore, setting the offgas radiation monitor at 1.5 times the nitrogen-16 background dose rate is not reasonable since setting the monitor that low can lead to spurious activations of the alarm.

Nine Mile Point Unit 1's monitor configuration, as described in the FSAR, detects the concentration of the offgas as it flows through the pipe. Thus, the detector is sensitive to fluctuations in condenser air inleakage, which can have an appreciable impact on the monitor readings, especially at readings as low as 1.5 times the normal full power background. Therefore, Niagara Mohawk proposes to set the alarm at five (5) times the normal full power background, which is still very conservative compared to the value allowed by Technical Specification 3.6.15.c., which is set based on Nine Mile Point Unit 1's Offsite Dose Calculation Manual.

Niagara Mohawk believes that a setting of five (5) times the normal full power background is extremely conservative and is low enough to ensure detection of even minor fuel performance changes. Furthermore, if the monitor alarms at this setpoint of five times the normal full power background, the offgas will immediately be sampled and analyzed, followed by an analysis of a reactor coolant sample.

Furthermore, the analyses in the Licensing Topical Report demonstrate that removal of the automatic reactor scram and Main Steam Line Isolation Valve closure functions of the Main Steam Line Radiation Monitor does not change the conclusions in the Final Safety Analysis Report (Updated) that the calculated radiological release consequences of the bounding control rod drop accident will not exceed the acceptable dose limits specified in 10CFR100.

Therefore, Niagara Mohawk concludes that the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

<u>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 previously evaluated.</u>

The function of a Main Steam Line Radiation Monitor trip is to detect abnormal fission produce release and isolate the main steam lines, thereby stopping the transport of fission products from the reactor to the main condenser. The monitors do not perform a prevention function for any kind of accident.

The main steam line high radiation scram and main steam line isolation functions were originally intended to mitigate, not prevent, an existing accident scenario. However, the functions being removed do not contribute to avoidance or mitigation of any previously evaluated accidents since no credit is taken for these functions in any design basis event for terminating the initiating event or assuring the radioactive release remains within accepted limits. The existence of a Main Steam Line Radiation Monitor trip does not prevent the occurrence of a fuel failure event or any other type of event. Elimination of these functions will not introduce a new or different accident scenario.

The proposed amendment represents a change to the physical configuration of the plant in that some reactor protection system circuits will be modified to eliminate the main steam line high radiation scram and main steam line isolation signals. However, these changes will not affect the remaining scram or vessel isolation functions. In all other respects, plant design and operation remain unchanged.

Therefore, Niagara Mohawk Power Corporation concludes that the proposed amendment will not create the possibility of a new or different kind of accident from any 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 do not involve a significant reduction in a margin of safety because, as shown in the topical report, the changes represent an overall improvement in plant safety in that the core damage frequency is reduced. Safe operation of the plant is enhanced by elimination of the unnecessary scram and isolation of the reactor vessel. With implementation of these changes, the primary heat sink remains available, a large transient on the vessel and safety-related actuations is avoided, and the Offgas System remains available to control the pathway of a potential release.

Therefore, Niagara Mohawk concludes that the proposed amendment will not involve a significant reduction in a margin of safety.

TABLE 1

CONTROL ROD DROP ACCIDENT
COMPARISON OF KEY ANALYSIS INPUT VALUES
NEDO-31400A VS. NINE MILE POINT UNIT 1

PARAMETER	NEDO-31400A VALUE[1]	NINE MILE POINT UNIT 1 DESIGN BASIS ANALYSIS
Number of Failed Fuel Rods	850	850
Core Average Power (MWt)	1579	1943 (105%)
Relative Power Level of Failed Rods (fraction)	1.5	1.5
Power Level of Failed Rods (MWt)	0.12	0.09
Fission Product Release from Failed Rods MELTED NON-MELTED	100% Noble Gases/50% Iodines 10% Noble Gases/10% Iodines 30% Krypton-85 (Regulatory Guide 1.25)	None 10% Noble Gases/10% Iodines 30% Krypton-85
Mass Fraction of Melted Fuel	0.0077	0
% of Fission Products Transported to Main Condenser	100% Noble Gases/10% Iodine	100% Noble Gases/10% Iodines
% Airborne of Fission Products in Main Condenser	100% Noble Gases/10% Iodine	100% Noble Gases/10% Iodines
Main Condenser Leakage[2]	1% per day	1% per day
Hydrogen Flow Rate to Recombiner- (Design Capability)	50-150 scfm	79 scfm[5]
Air/Noble Gas Flow Rate	site specific	22 scfm
Thyroid Dose Conversion Factor	Regulatory Guide 1.109	TID-14844
Breathing Rates	Regulatory Guide 1.3	Regulatory Guide 1.3
Whole Body Dose Conversion Factor (Semi-Infinite Cloud)	Regulatory Guide 1.109	TID-14844

TABLE 1 - Continued

PARAMETER	NEDO-31400A VALUE[1]	NMP1 DESIGN BASIS ANALYSIS
Radiological Consequences Evaluation[4]	CONACO3	DRAGON
Dispersion Coefficient, X/Q		
0-2 hour Exclusion Area Boundary *(with Main Steam Isolation Valve isolation)*	2.5E-03 sec/m^3	1.30E-04 sec/m^3
0-2 hour Exclusion Area Boundary *(without Main Steam Isolation Valve isolation)*	3.0E-04 sec/m^3	5.98E-05 sec/m^3
Charcoal Bed Holdup Times:[3,6]	Krypton = 20 hours Xenon = 15 days	Krypton = 32.8 hours Xenon = 24.4 days

FOOTNOTES:

1 Except as noted in 2 and 3 below, values apply to the CRDA both *with* Main Steam Isolation Valve isolation and *without* Main Steam Isolation Valve isolation.

2 Applies only to Control Rod Drop Accident *with* Main Steam Isolation Valve isolation.

3 Applies only to Control Rod Drop Accident *without* Main Steam Isolation Valve isolation and 100% of Noble Gas source term processed through the Off-Gas Treatment System.

4 NEDO-31400A calculates the radiological consequences of a Control Rod Drop Accident using the CONACO3 code while Nine Mile Point Unit 1 uses the DRAGON code. General Electric memo, DRR-89-07, dated 5/9/89, has provided fuel activity release fractions required to update the Nine Mile Point Unit 1 Final Safety Analysis Report.

5 Varies according to air in leakage.

6 For a control rod drop accident without Main Steam Isolation Valve isolation, 100% of the Noble Gases are held-up in the Offgas Treatment system charcoal beds for a time; the Iodines are retained indefinitely in the charcoal beds.

TABLE 2

CONTROL ROD DROP ACCIDENT DOSE COMPARISON
NINE MILE POINT UNIT 1
DESIGN BASIS VS. NEDO-31400A

Two Hour Exclusion Area Boundary	With Main Steam Line Isolation				Without Main Steam Isolation			
	NEDO-31400A		Nine Mile Point Unit 1 Design Basis		NEDO-31400A		Nine Mile Point Unit 1[2]	
	Dose *(REM)*	%[1]	Dose *(REM)*	%[1]	Dose *(REM)*	%[1]	Dose *(REM)*	%[1]
Whole Body	3.10E-01	5.17	1.14E-02	0.19	5.5E-01	9.17	2.02E-02	0.34
Thyroid	4.30E+00	5.73	1.94E-01	0.26	N/A	N/A	N/A	N/A

FOOTNOTES:

1 *Percent* of 25% of 10CFR100 (or 6.25 REM Whole Body and 75 REM Thyroid)

2 Nine Mile Point Unit 1 site specific dose projections using NEDO-31400A methodology.