UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 73
License No. NPF-69

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated January 17, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph.2.C.(2) of Facility Operating License No. NPF-69 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan .

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 73 are hereby incorporated into this license. Niagara Mohawk Power Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Alexander W Dromerick for

Jocelyn A. Mitchell, Acting Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 25, 1996

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Revise Appendix A as follows:

Remove Pages	Insert Pages
v	v
vi	vi
3/4 3-1	3/4 3-1
3/4 3-1a	3/4 3-1a
(need to reissue 3/4 3-2 and 3/4 3-3 with blank carryover page)	
3/4 3-6	3/4 3-6
3/4 3-10	3/4 3-10
3/4 3-11	3/4 3-11
3/4 3-12	3/4 3-12*
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 3-22	3/4 3-22*
3/4 3-29	3/4 3-29
3/4 3-30	3/4 3-30*
3/4 3-39	3/4 3-39
3/4 3-50	3/4 3-50
3/4 3-51	3/4 3-51
3/4 3-53	3/4 3-53
(need to reissue 3/4 3-54 with blank carryover page)	
B 3/4 3-1	B 3/4 3-1
B 3/4 3-2	B 3/4 3-2
B 3/4 3-2a	B 3/4 3-2a
B 3/4 3-3	B 3/4 3-3

*Overleaf page provided to maintain document completeness.

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.1 As a minimum, the reactor protection system instrumentation channels shown in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3.1-1.

ACTION:

a. With one channel required by Table 3.3.1-1 inoperable in one or more Functional Units, place the inoperable channel and/or that trip system in the tripped condition* within 12 hours. The provisions of Specification 3.0.4 are not applicable.

b. With two or more channels required by Table 3.3.1-1 inoperable in one or more Functional Units:

1. Within one hour, verify sufficient channels remain OPERABLE or tripped* to maintain trip capability in the Functional Unit, and

2. Within 6 hours, place the inoperable channel(s) in one trip system and/or that trip system** in the tripped condition*, and

3. Within 12 hours, restore the inoperable channels in the other trip system to an OPERABLE status or tripped*.

Otherwise, take the ACTION required by Table 3.3.1-1 for the Functional Unit.

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* An inoperable channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable channel is not restored to OPERABLE status within the required time, the ACTION required by Table 3.3.1-1 for the Functional Unit shall be taken.

** This ACTION applies to that trip system with the most inoperable channels; if both trip systems have the same number of inoperable channels, the ACTION can be applied to either trip system.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each reactor protection system instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.1.1-1.

4.3.1.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.1.3 The REACTOR PROTECTION SYSTEM RESPONSE TIME of each required reactor trip functional unit shall be demonstrated to be within its limit at least once per 18 months. Neutron detectors are exempt from response time testing. Each test shall include at least one channel per Trip System so that all channels are tested at least once per N times 18 months, where N is the total number of redundant channels in a specific reactor Trip System.

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1. Intermediate Range Monitors:			
a. Neutron Flux - High	2	3	1
	3, 4	3	2
	5(b)	3	3
b. Inoperative	2	3	1
	3, 4	3	2
	5	3	3
2. Average Power Range Monitor(c):			
a. Neutron Flux - Upscale, Setdown	2	2	1
	3, 4	2	2
	5(b)	2	3
b. Flow Biased Simulated Thermal Power - Upscale	1	2	4
c. Fixed Neutron Flux - Upscale	1	2	4
d. Inoperative	1, 2	2	1
	3, 4	2	2
	5	2	3
3. Reactor Vessel Steam Dome Pressure - High	1, 2(d)	2	1
4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	1

TABLE 3.3.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
5. Main Steam Line Isolation Valve - Closure	1(e)	4	4
6. Main Steam Line Radiation - High	1, 2(d)	2	5
7. Drywell Pressure - High	1, 2(f)	2(g)	1
8. Scram Discharge Volume Water Level - High			
a. Transmitter/Trip Units	1, 2	2	1
	5(h)	2	3
b. Float Switches	1, 2	2	1
	5(h)	2	3
9. Turbine Stop Valve - Closure	1(i)	4(j)	6
10. Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	1(i)	2(j)	6
11. Reactor Mode Switch Shutdown Position	1, 2	2	1
	3, 4	2	7
	5	2	3
12. Manual Scram	1, 2	2	1
	3, 4	2	8
	5	2	9

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3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.2 The isolation actuation instrumentation channels shown in Table 3.3.2-1 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.2-2.

APPLICABILITY: As shown in Table 3.3.2-1.

ACTION:

a. With an isolation actuation instrumentation channel Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with its Trip Setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for one Trip System, either

1. Place the inoperable channel(s) in the tripped condition within

a) 1 hour for trip functions without an OPERABLE channel
b) 12 hours for trip functions common to RPS Instrumentation, and
c) 24 hours for trip functions not common to RPS Instrumentation

or

2. Take the ACTION required by Table 3.3.2-1.

c. With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement for both trip systems,

1. Place the inoperable channel(s) in one trip system in the tripped condition within one hour, and

2. a) Place the inoperable channel(s) in the remaining trip system in the tripped condition within

1) 1 hour for trip functions without an OPERABLE channel
2) 12 hours for trip functions common to RPS Instrumentation, and
3) 24 hours for trip functions not common to RPS Instrumentation,

or

b) Take the ACTION required by Table 3.3.2-1.

The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each isolation actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.2.1-1.

4.3.2.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.2.3 The ISOLATION SYSTEM RESPONSE TIME of each required isolation Trip Function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one channel per Trip System so that all channels are tested at least once per N times 18 months, where N is the total number of redundant channels in a specific isolation Trip System.

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(b)	APPLICABLE OPERATIONAL CONDITION	ACTION
1. Primary Containment Isolation Signals				
a. Reactor Vessel Water Level				
1. Low, Low, Low, Level 1	1	2	1, 2, 3	20
2. Low, Low, Level 2(c)(d)	2,3,6,7,8,9	2	1, 2, 3 and *	20
3. Low, Level 3	4,5	2	1, 2, 3	20
b. Drywell Pressure - High(c)(d)	3,4,8,9	2	1, 2, 3	20
c. Main Steam Line				
1. Radiation - High(e)	1,2	2	1, 2, 3	21
2. Pressure - Low	1	2	1	23
3. Flow - High	1	2/Line	1, 2, 3	21
d. Main Steam Line Tunnel				
1. Temperature - High	1	2	1, 2, 3	21
2. ΔTemperature - High	1	2	1, 2, 3	21
3. Temperature - High MSL Lead Enclosure	1	6	1, 2, 3	21
e. Condenser Vacuum-Low	1	2	1, 2**, 3**	21
f. RHR Equipment Area Temperature - High (HXs/A&B Pump Rooms)	5,10	2	1, 2, 3	28
g. Reactor Vessel Pressure - High (RHR Cut-in Permissive)	5	2	1, 2, 3	28

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TABLE 3.3.2-4

VALVE GROUPS AND ASSOCIATED ISOLATION SIGNALS

VALVE GROUPS	ASSOCIATED CONTAINMENT ISOLATION VALVES BY FUNCTION	ISOLATION SIGNALS
1	MSIVs and MSL Drains	Z, X, C, D, E, P, T, R, RM, AA
2	Recirculation System Sample Valves	B, C, Z, RM
3	TIP Isolation	B, F, Z, RM
4	RHR Sample & Radioactive Waste Valves	A, Z, F, RM
5	RHR Shutdown Cooling Valves and Head Spray	A, L, M, Z, RM, CC, DD
6	RWCU Outboard Isolation Valve	B, U, J, S, Z, RM, DD
7	RWCU Inboard Isolation Valve	B, J, U, S, Z, RM, DD
8	All Containment Isolation Valves Not Assigned To Another Group	B, F, Z, RM
9	Containment Purge Valves	B, F, Y, Z, RM
10	RCIC Steam Supply Valves	K, M, H, Z, RM, BB, CC, DD
11	RCIC Vacuum Breaker Isolation Valves	H* & F*, RM
12	Remote Manually Operated Containment Valves	RM

* Both signals must be coincident to cause isolation.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.3 The emergency core cooling system (ECCS) actuation instrumentation channels shown in Table 3.3.3-1 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.3-2.

APPLICABILITY: As shown in Table 3.3.3-1.

ACTION:

a. With an ECCS actuation instrumentation channel Trip Setpoint less conservative than the value shown in the Allowable Value column of Table 3.3.3-2, declare the channel inoperable until the channel is restored to OPERABLE status with its Trip Setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more ECCS actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.3-1.

c. With either ADS Trip System "A" or "B" inoperable, restore the inoperable Trip System to OPERABLE status within:

   1. 7 days, provided that the HPCS and RCIC systems are OPERABLE, or
   2. 72 hours, provided either the HPCS or RCIC systems are inoperable.

   Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to less than or equal to 100 psig within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each ECCS actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION operations for the OPERATIONAL CONDITIONS and at the frequencies shown in Table 4.3.3.1-1.

4.3.3.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.3.3 The ECCS RESPONSE TIME of each required ECCS System shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per Trip System so that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ECCS Trip System.

TABLE 3.3.3-1

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
A. Division I Trip System			
1. RHR-A (LPCI Mode) & LPCS System			
a. Reactor Vessel Water Level - Low, Low, Low, Level 1	2(b)	1, 2, 3, 4*, 5*	30
b. Drywell Pressure - High	2(b)	1, 2, 3	30
c. LPCS Pump Discharge Flow - Low (Bypass)	1/Pump	1, 2, 3, 4*, 5*	31
d. LPCS Injection Valve Permissive	1	1, 2, 3	32
		4*, 5*	33
e. LPCI Injection Valve Permissive	1	1, 2, 3	32
		4*, 5*	33
f. LPCI Pump A Start Time Delay Relay Normal Power	1	1, 2, 3, 4*, 5*	32
g. LPCI Pump A Start Time Delay Relay Emergency Power	1	1, 2, 3, 4*, 5*	32
h. LPCS Pump Start Time Delay Normal Power	1	1, 2, 3, 4*, 5*	32
i. LPCS Pump Start Time Delay Emergency Power	1	1, 2, 3, 4*, 5*	32
j. LPCI Pump A Discharge Flow - Low (Bypass)	1/Pump	1, 2, 3, 4*, 5*	31
k. Manual Initiation	1/Trip System	1, 2, 3, 4*, 5*	35
2. Automatic Depressurization System Trip System "A"(c)			
a. Reactor Vessel Water Level - Low, Low, Low, Level 1	2(b)	1, 2, 3	30
b. ADS Timer	1	1, 2, 3	32
c. Reactor Vessel Water Level - Low, Level 3 (Permissive)	1	1, 2, 3	32
d. LPCS Pump Discharge Pressure - High (Permissive)	2	1, 2, 3	32
e. LPCI Pump A Discharge Pressure - High (Permissive)	2	1, 2, 3	32
f. Manual Inhibit	1	1, 2, 3	32
g. Manual Initiation	2/System	1, 2, 3	35

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RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.4.2 The end-of-cycle recirculation pump Trip (EOC-RPT) System instrumentation channels shown in Table 3.3.4.2-1 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-2.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

ACTION:

a. With an end-of-cycle recirculation pump Trip System instrumentation channel Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both Trip Systems, place the inoperable channel(s) in the tripped condition within 12 hours.

c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one Trip System and:

   1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within 1 hour.

   2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the Trip System inoperable.

d. With one Trip System inoperable, restore the inoperable Trip System to OPERABLE status within 72 hours or take the ACTION required by Specification 3.2.3.

e. With both Trip Systems inoperable, restore at least one Trip System to OPERABLE status within 1 hour or take the ACTION required by Specification 3.2.3.

SURVEILLANCE REQUIREMENTS

4.3.4.2.1 Each end-of-cycle recirculation pump Trip System instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.4.2-1.

4.3.4.2.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

4.3.4.2.3 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME of each Trip Function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least the logic of one type of channel input, turbine control valve fast closure or turbine stop valve closure, so that both types of channel inputs are tested at least once per 36 months.

TABLE 3.3.4.2-2

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SETPOINTS

TRIP FUNCTION		TRIP SETPOINT	ALLOWABLE VALUE
1.	Turbine Stop Valve - Closure	≤5% closed	≤7% closed
2.	Turbine Control Valve - Fast Closure	≥530 psig	≥465 psig

TABLE 4.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SURVEILLANCE REQUIREMENTS

TRIP FUNCTION		CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1.	Turbine Stop Valve - Closure	Q	R
2.	Turbine Control Valve - Fast Closure	Q	R

INSTRUMENTATION

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.5 The reactor core isolation cooling (RCIC) system actuation instrumentation channels shown in Table 3.3.5-1 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.5-2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3 with reactor steam dome pressure greater than 150 psig.

ACTION:

a. With an RCIC system actuation instrumentation channel Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.5-2, declare the channel inoperable until the channel is restored to OPERABLE status with its Trip Setpoint adjusted consistent with the Trip Setpoint value.

b. With one or more RCIC system actuation instrumentation channels inoperable, take the ACTION required by Table 3.3.5-1.

SURVEILLANCE REQUIREMENTS

4.3.5.1 Each RCIC system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.5.1-1.

4.3.5.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

BASES

3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION

The reactor protection system (RPS) automatically initiates a reactor scram to:

a. Preserve the integrity of the fuel cladding.

b. Preserve the integrity of the reactor coolant system.

c. Minimize the energy which must be adsorbed following a loss-of-coolant accident, and

d. Prevent inadvertent criticality.

This specification provides the Limiting Conditions for Operation necessary to preserve the ability of the system to perform its intended function even during periods when instrument channels may be out of service because maintenance is being performed. When necessary, one channel may be made inoperable for brief intervals to conduct required surveillance.

The reactor protection system is made up of two independent trip systems. There are usually four channels to monitor each parameter, and there are two channels in each trip system. The outputs of the channels in a trip system are combined in a logic so that either channel will trip that trip system. The tripping of both trip systems will produce a reactor scram. The system meets the intent of IEEE-279 for nuclear power plant protection systems. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," and MDE-78-0485, "Technical Specification Improvement Analysis for Nine Mile Point Nuclear Station, Unit 2." The bases for the trip settings of the RPS are discussed in the bases for Specification 2.2.1. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains RPS trip capability.

The measurement of response time at the specified frequencies provides assurance that the protective functions associated with each channel are completed within the time limit assumed in the safety analyses. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurement, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either (1) inplace, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response times.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required surveillance. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analyses for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," and with NEDC-31677P-A, "Technical Specification Improvement Analyses for BWR Isolation Actuation Instrumentation." When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function maintains primary containment isolation capability. Some of the trip settings may have tolerances explicitly stated where both the high and low values are critical and may have a substantial effect on safety. The setpoints of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Except for the MSIVs, the FSAR Chapter 15 safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For AC-operated valves, it is assumed that the AC power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the DC-operated valve is assumed; thus the signal delay (sensor response) is concurrent with the 13-second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 13-second delay. It follows that checking the valve speeds and the 13-second time for establishing emergency power will establish the response time for the isolation functions.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analysis. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the OPERABILITY requirements and Trip Setpoints that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analysis. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

The HPCS pump suction pressure-low represents an analytical transfer level in the condensate storage tank of 14 feet at maximum flow and 3.0 feet at minimum flow. This is above the corresponding minimum tank level of 10.2 feet at maximum flow and 2.9 feet at minimum flow required to prevent vortexing.

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30936P-A, "Technical Specification Improvement Methodology, (with Demonstration for BWR ECCS Actuation Instrumentation) Parts 1 and 2," and RE-026, "Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for Nine Mile Point Nuclear Station, Unit 2." When a channel is placed in an inoperable status solely for performance of required surveillances, entry into LCO and required ACTIONS may be delayed, provided the associated function or the redundant function maintains ECCS initiation capability.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971, NEDO-24222, dated December 1979; and Section 15.8 of the FSAR.

The end-of-cycle recirculation pump trip (EOC-RPT) system is an essential safety supplement to the reactor trip. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end of cycle. The physical phenomenon involved is that the void reactivity to the reactor system at a faster rate than the control rods add negative scram reactivity. When actuated, the EOC-RPT system trips both recirculation pumps to the low speed condition, thereby reducing coolant flow in order to reduce the void collapse in the core during two of the most limiting pressurization events. The two events for which the EOC-RPT protective feature will function are closure of the turbine stop valves and fast closure of the turbine control valves.

A fast closure sensor from each of two turbine control valves provides input to the EOC-RPT system; a fast closure sensor from each of the other two turbine control valves provides input to the second EOC-RPT system. Similarly, a position switch for each of two turbine stop valves provides input to one EOC-RPT system; a position switch from each of the other two stop valves provides input to the other EOC-RPT system. For each EOC-RPT system, the sensor relay contacts are arranged to form a 2-out-of-2 logic for the fast closure of turbine control valves and a 2-out-of-2 logic for the turbine stop valves. The operation of either logic will actuate the EOC-RPT system and trip both recirculation pumps.

Each EOC-RPT system may be manually bypassed by use of a switch which is administratively controlled by procedures. The manual bypasses and the automatic Operating Bypass at less than 30% of RATED THERMAL POWER are annunciated in the control room.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc. Included in this time are: the time from initial valve movement to reaching the Trip Setpoint, the response time of the sensor, the response time of the system logic, and the time allotted for breaker arc suppression.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference